The RUBBER AGE

Published TWICE-A-MONTH at New York

Vol. 21 AUGUST 25, 1927 No. 10

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FINE RUBBER DU PONT CHEMICALS

The RUBBER AGE

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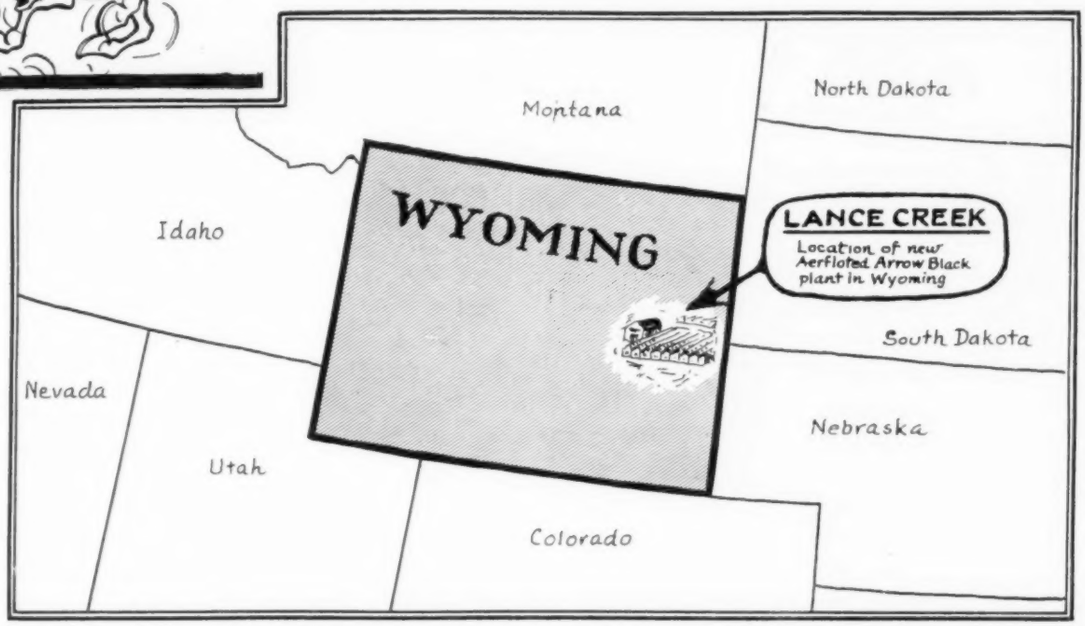
The Radio Weightmeter

AS a leading feature in this issue there is presented the first complete and adequate description of the radio Verigraph or Weightmeter that has appeared in the rubber trade press. This device gives the operator of a calendering machine a positive and constant guide as to the weight of the sheet being produced. It relies upon a simple radio principle and the story of how it works will probably interest many in the industry in addition to the plant superintendent and engineer. The savings which the Verigraph is said to make are surprisingly large. The device has already been widely accepted in the rubber industry. This description is by James Millen, a mechanical engineer and a collaborator of the inventor of the Verigraph.

IN THE NEXT ISSUE—

"Rubber Legislation in the New Congress"

Out of the West!



aerfloted ARROW BLACK

Now Comes from Wyoming—

Rubber manufacturers are vitally interested in the geographical diversity of Carbon Black resources. West Virginia and Kentucky are now practically eliminated as producers due to industrial competition for the gas supplies.

In Wyoming, we control an ample supply of *uniform* gas, gathered from a vast acreage of sparse habitation.

Our new Lance Creek plant is operating under ideal conditions to produce a *high grade and uniform* rubber black in the finest plant we have yet built.

From the standpoint of assured future supplies, we suggest the adoption of Huber Wyoming Black as an alternative for present standards.

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The Rate of Cure Increases *Constantly* With Increase of Temperature

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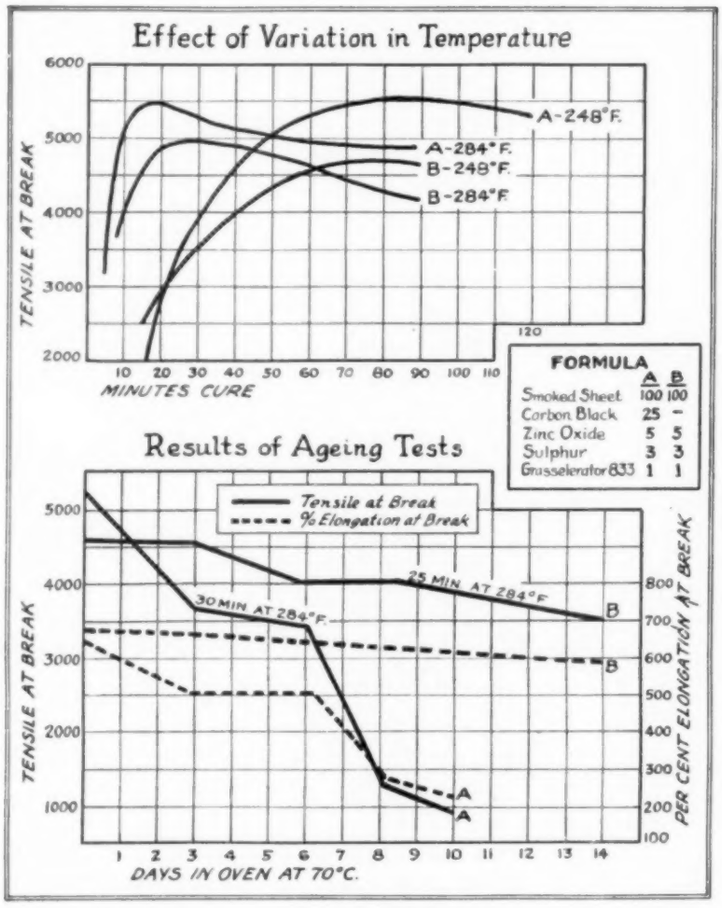

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347 MADISON AVENUE · · · NEW YORK

A Reminder to Producers and Distributors of

RUBBER CHEMICALS *and* COMPOUNDING MATERIALS—

Contract Time is Coming!

WITHIN a short while, the purchasing departments of rubber factories will begin to confer with their rubber chemists on 1928 supplies of chemicals, colors, pigments and all the other compounding materials usually bought on contract. Many sources of supply will be studied—surely every well-known advertised brand will receive the consideration which it deserves.

Will your products fall in this class—and will they be considered for contracts? Does the chemist and purchasing agent know why *your* products should be used?

Many leading producers of rubber chemicals, realizing the importance of creating good-will for their products at the time of the year when 1928 contracts are being considered, have already made arrangements to intensify their advertising campaign during the next few weeks. If *you* want a larger share of 1928 business, THE RUBBER AGE suggests that you adopt a similar plan.

THE RUBBER AGE *is the leading medium for Chemical advertising*

In making your advertising plans, it will of course pay you to use THE RUBBER AGE—the publication which is now carrying a greater volume of rubber chemical advertising every month than any other medium reaching rubber chemists.

Over 36 leading producers of compounding materials are using space regularly in THE RUBBER AGE—some are using it *exclusively* in the rubber field while others are using more space in THE RUBBER AGE than in any other paper.

These facts speak for themselves! They prove, beyond a doubt that chemical producers appreciate the advantages of a semi-monthly publication which is usually the first to present the latest technical developments of the industry to rubber chemists and engineers.

Timeliness, Authoritativeness and Reader Interest have made THE RUBBER AGE the outstanding rubber publication for reaching rubber chemists.

Start your advertising in the September 10th issue of THE RUBBER AGE. This issue will reach the chemists just after they return from the Detroit meeting of the American Chemical Society and begin to consider their contracts for next year.

THE RUBBER AGE

250 WEST 57th STREET NEW YORK CITY

THE NAUGATUCK CHEMICAL COMPANY
NEW YORK

Materials
for the
Rubber Goods
Manufacturer

SAFEX

A New Ultra Accelerator

for fast cures at low temperatures without scorching

SAFEX has been developed to meet the demand for an accelerator of great activity at temperatures of ten pounds steam and above with unusual safety in handling at ordinary mill temperatures.

SAFEX is adaptable for curing in mold, steam, water or air.

SAFEX works well with reclaim and the commonly used fillers and softeners.

SAFEX is the safe ultra accelerator for tires, tubes, mechanical goods and footwear.

Test data is available and will be furnished with samples.

THE NAUGATUCK CHEMICAL CO.
1790 BROADWAY
NEW YORK CITY, N. Y.

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The RUBBER AGE

VOL. 21 NO. 10 AUGUST 25, 1927

Rubber Chemists Announce Program for Detroit Meeting

Following a Reclaimed Rubber Symposium, Well-Known Technologists Will Contribute Nine Papers on Important Subjects— Business Meeting, Banquet and Excursions Have Place on Program

RUBBER chemists from all sections of the rubber industry, together with many others who are interested in their work, will soon be on their way to Detroit for the eleventh annual meeting of the Rubber Division, American Chemical Society. The first session will be held on Wednesday, September 7, and up until Friday evening the program calls a variety of papers and entertainment which the executive committee has been arranging during the last several months.

Chief on the program which Chairman R. P. Dinsmore of the Goodyear Tire and Rubber Company will have in hand is a reclaimed rubber symposium. Five important papers on reclaimed rubber, in the preparation of which nine chemists have collaborated, will be presented. The exact titles and the authors are indicated in the complete program on the next page, now published for the first time.

The symposium idea is carried over from last year's annual meeting at Philadelphia when a crude rubber symposium was held under the chairmanship of John M. Bierer. Well-known experts from the United States and abroad participated in what turned out to be one of the most successful meetings the Division had ever held. Mr. Dinsmore is confident that the reclaimed rubber symposium will be as helpful with respect to that commodity as the crude rubber discussions were last year. The idea of discussing the use of reclaimed rubber from several angles is held to be particularly apt since reclaim is now being used at an unprecedentedly high rate in the rubber industry. Both reclaimers and manufacturers are taking part in the symposium as a glance at the program will show.

The reclaimed rubber papers are not expected to occupy all of the first day and the first paper of the general sessions is scheduled as the last event for that day. On the second day four more papers of varied interest will be read and the Division's business session will be held as well. The usual election of officers will take place and it is anticipated also that a complete discussion will be had on certain proposals which have been circulated among the membership of the Division.

First among these is the proposal to establish two or three local sections of the Rubber Division in appropriate cities. This scheme is used by the Institution of the Rubber Industry of Great Britain which has sections in Manchester and Birmingham in addition to the London headquarters. These local sections of the Rubber Division would be entitled to have associate members, taken from those interested in the rubber industry, although they may not be chemists.

R. P. DINSMORE
Chairman, Rubber Division

A second proposal which will be considered is to circulate among members of the Division a supplementary binding of reprints containing all articles on rubber which are ordinarily printed in the rubber journals and also other worth-while papers for which the rubber journals do not find space.

The afternoon of Thursday, the second day of the meeting, will be devoted to excursions. These have been arranged for by a Detroit committee and are expected to prove unusually interesting.

The banquet of the Rubber Division, which is always an enjoyable event, will be held on Thursday evening. The Division will have several guests and members are expected to bring their wives and friends. The banquet will be held in the Book-Cadillac Hotel where all the meetings of the Division will take place.

The speaker at the banquet will be Dr. Karl Arnstein, vice-president of the Goodyear Zepplin Corporation, who will tell the chemists something about the development, present status and probable future of lighter-than-air craft. Pending the completion of final arrangements, announcements concerning the other features of the banquet program are withheld. It is known, however, that a musical program has been arranged for.

The last four papers will be read on Friday and following discussion of them, and

the completion of any unfinished business, the meeting will adjourn.

The papers other than those on reclaimed rubber cover a wide variety of topics, two of them dealing with the testing of rubber goods. These are "An Analysis of a Typical Angle Abrasion Machine" by W. W. Vogt of the Goodyear Tire and Rubber Company, and "A Hardness Tester for Rubber" by E. C. Zimmerman and R. W. Brown of the Firestone Tire and Rubber Company. Hard rubber will come in for attention by means of D. E. Pearsall's paper on "Influence of Sulfur Rubber Ratio on the Physical Properties of Hard Rubber." The aging of rubber will be discussed in three of the papers.

Other Divisions Will Meet Also

The meeting of the Rubber Division celebrating its eleventh anniversary will be a part of the meeting of the entire American Chemical Society of which it is a part. The Detroit gathering will be the 74th meeting of the Society. The other Divisions, in addition to the Rubber Division, will be holding their meetings and some of them will attract rubber chemists also. Of particular interest will be a symposium which will be held jointly by the Industrial and Petroleum Divisions. The general subject will be "Chemistry's Contribution to Automotive Transportation," and the discussion will be led by Dr. W. C. Geer, formerly vice-president of the B. F. Goodrich Company. Since more than three-fourths of the rubber consumed in the United States is made into automotive rubber goods, the rubber chemists are expected to be attracted to this symposium. Dr. Geer's participation in it will also prove an attraction for them.

The various Divisions will meet in different buildings in Detroit. All of the meetings and functions of the Rubber Division will be at the Book-Cadillac, the newest and finest of Detroit hotels. Most of the chemists attending the meetings are also planning to stop at that hotel. The headquarters of the American Chemical Society will be at the Hotel Statler and some of the Divisions will also hold their meetings there.

PROGRAM

Eleventh Anniversary Meeting, Rubber Division, A. C. S.

Detroit, September 7, 8 & 9, 1927

WEDNESDAY, SEPTEMBER 7, 10:00 A. M. and 2:00 P. M.

RECLAIMED RUBBER SYMPOSIUM

Pigment Reinforcement and Reclaimed Rubber,
H. A. Winkelman and E. G. Croakman, **Philadelphia Rubber Works Co.**

Effect of High Sulfur vs. Low Sulfur in Vulcanizing Reclaim,
R. E. Cartlidge and H. L. Snyder, **Akron Rubber Reclaiming Co.**

The Value of the Rubber Hydrocarbon in Reclaim,
W. W. Vogt, **Goodyear Tire and Rubber Co.**

Rate of Cure of Reclaimed Rubber,
N. A. Shepard, H. F. Palmer and G. W. Miller, **Firestone Tire and Rubber Co.**

Factors in Processing Reclaimed Rubber,
P. S. Shoaff, **Goodyear Tire and Rubber Co.**

GENERAL PROGRAM

Effect of Certain Metallic Salts on the Aging of a Tread Compound
Bert S. Taylor and W. N. Jones, **The B. F. Goodrich, Co.**

THURSDAY, SEPTEMBER 8, 9:30 A. M. to 1:00 P. M.

Annual Business Meeting and Election of Officers,
R. P. Dinsmore, **Chairman.**

An Analysis of a Typical Angle Abrasion Machine,
W. W. Vogt, **Goodyear Tire and Rubber Co.**

Effect of Amphoteric Metallic Salts on Rubber.
H. A. Winkelman and W. N. Jones, **Philadelphia Rubber Works and Goodrich.**

Influence of Sulfur Rubber Ratio on the Physical Properties of Hard Rubber,
D. E. Pearsall.

Hardness Tester for Rubber,
E. C. Zimmerman and R. W. Brown, **Firestone Tire and Rubber Co.**

THURSDAY, SEPTEMBER 8, 2:00 P. M.

Excursions to Detroit Industrial Plants

THURSDAY, SEPTEMBER 8, 7:00 P. M.

Banquet, Rubber Division and Guests, Book-Cadillac Hotel.

FRIDAY, SEPTEMBER 9, 9:30 A. M.

Effect of Ozonized Oxygen on Stretched Rubber,
F. L. Haushalter and W. N. Jones, **The B. F. Goodrich Co.**

Aging of Stretched Rubber,
Arthur Kelly, Bert S. Taylor and W. N. Jones, **The B. F. Goodrich Co.**

An Analysis of Natural and Artificial Aging of Rubber.
W. W. Vogt, L. B. Sebrell and S. M. Martin, Jr., **Goodyear Tire and Rubber Co.**

Effect of Heat on Rubber,
C. R. Park, L. B. Sebrell and C. M. Carson, **Goodyear Tire and Rubber Co.**

OFFICERS

Rubber Division, A. C. S.

Chairman
R. P. DINSMORE

Vice-Chairman
H. L. FISHER

Secretary-Treasurer
ARNOLD H. SMITH

Executive Committee
N. A. SHEPARD
C. C. DAVIS
FRANK KOVACS
IRA WILLIAMS
A. A. SOMERVILLE

Detroit will give the rubber chemists an opportunity to visit many plants in which they have an interest. The Morgan and Wright plant of the United States Rubber Company is at Detroit and will welcome the visitors. The large automobile plants are also sure to attract many of the chemists. It is generally regarded that Detroit, sometimes called "the wonder city of the world," offers the convention delegate as much or more of interest than any other large American city. More than 300 national, international and state meetings were held in the city in 1926. On account of its central location attendance is always satisfactory and it is regarded as sure that the rubber chemists' meetings will not lag in this respect.

Those going on the excursions scheduled for Thursday afternoon will have a number of attractions from which to choose. Open house will be held at the Ford factories, as well as at the Ford Airport. With rubber promising to play an important part in aircraft, as it has in automobiles, rubber chemists will welcome the opportunity to see something of their manufacture. Ford's Fordson plant, at River Rouge, is said to be the largest industrial establishment in the world.

A Special Section
NEWS of the INDUSTRY
Begins on Page 501

The Complete Story of the Radio Verigraph or Weightmeter

Positive and Constant Control of Weight of Calendered Rubber Stocks Is Accomplished By a Radio Device and Rubber Factories Save Thousands of Dollars As a Result

By JAMES MILLEN

RUBBER has long held a prominent position in the radio industry. Its application has been manifold and its usefulness in panels, coil forms, wire covering, sockets, cases for storage batteries and so on, is well known. Until recently, however, radio had no means of discharging its debt to the rubber industry.

The scales are now being balanced with the perfection of a radio device to cure an ill long endured by the rubber manufacturers, namely, the large deviations from desired standards in the weight of rubber coming off the calenders.

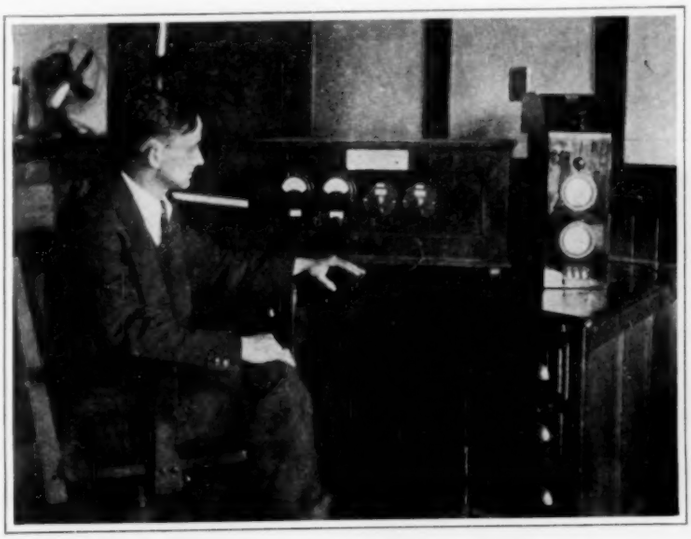
If it were stated to a mill superintendent, engineer, or research director of any of the old established industries that in a certain industry the control of the unit basis weight of the primary stage of its manufacturing process was not being kept within ten per cent limits, they would remark that such conditions were incredible. Yet that is what radio has proved to the rubber industry. Moreover, radio, besides proving the fact, is supplying the remedy.

All rubber men know that the measure of the amount of rubber being impregnated into fabric, being made into sheets for pure rubber goods or for shoe uppers is mainly tested by the caliper of the material leaving the calender. They have always known that this method of testing was at best an approximation, that variations in the consistency of rubber or its temperature was responsible for the rubber sinking between the meshes of the fabric to varying degrees, thus changing caliper without changing the rubber used per square yard. They know also that two men will often get different results on the same sample with the same instrument due to the caliper itself sinking into the rubber to different extents.

Albert Allen, radio experimenter, formerly employed as a research engineer in a large New England mill, did not know of these conditions but he knew that if he perfected the idea which was running through his head into an instrument which would give an instantaneous, continuous, and accurate measure of the weight of a moving web of material, it would be of great value to many industries. It took two years of work, including experimenting and study at Harvard University, for him to turn the idea into a perfected instrument. The Atlantic Precision Company, the organization which backed Allen in his work, are now offering the device to the rubber and other industries.

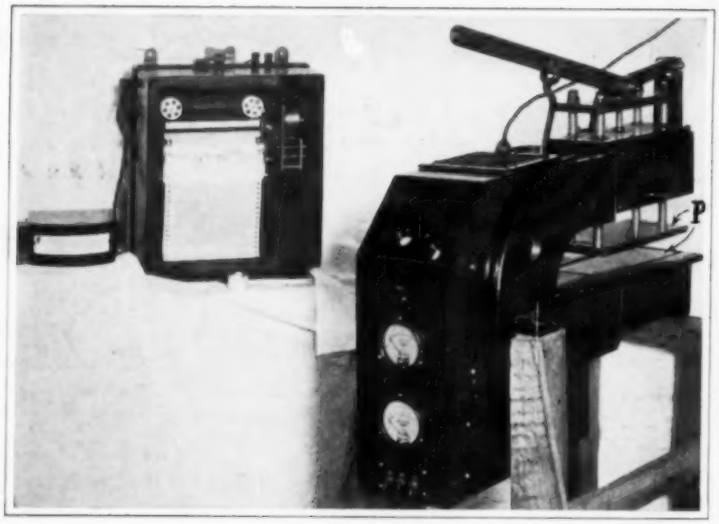
The Verigraph, as this instrument is called, is based on the principle that the electrical property of a condenser called "capacity" changes as the amount of material between the condenser plates changes. One of the accompanying illustrations which shows the installation of a Verigraph on a shoe upper calender at the plant of the Converse Rubber Shoe Company, shows plainly the upper plate of this condenser, the lower plate being hidden from view by the web of rubber which is passing between, but not necessarily touching, the two plates. At any given instant the capacity of the condenser depends upon the weight per square yard of the rubber sheet between its plates. The changes in the capacity of the condenser, which is hooked up in a sturdy, trouble free, and compactly constructed thermonic tube oscillator, are interpreted by needle movements of suitable meters, one an indicating meter set at the calender to guide the operator in his control, the other a recording meter set if desired in the office of the superintendent to give a continuous record of the calender performance. The record as drawn by the Verigraph is often used as a means of paying a quality bonus to the calender operator.

(Continued on next page)



THE FIRST AND LATEST MODELS

The inventor of the Verigraph, Albert Allen, of Bangor, Maine, is here comparing the first home-made model of his device with one of the latest commercial instruments manufactured by the Atlantic Precision Company



THE VERIGRAPH AND RECORDING INSTRUMENTS

The recording instrument in the center of this group may be located in the superintendent's office or any other desired place and employed to make a continuous written record of the variations in weight of a web of rubber stock. A sample curve is shown in Fig. 3. The indicator to the extreme left is for the guidance of the calender operator. At the right is the Atlantic Verigraph which operates the recording and indicating instruments

The installation of this instrument has often disclosed variations in stock coming from the calenders that astonished the men responsible for checking the uniformity of the goods made, because their check tests by roll weights give only the average throughout the roll. It has been proved to the satisfaction of many of these men that their stock was continuously varying as much as 5 ounces per square yard on tire fabrics of about 50 ounce weight. It has been proved to others that in order to avoid any chances of rejection due to underweight some calender operators were intentionally running the stock several thousandths of an inch heavier than standard.

The chart at the bottom of this and the next page of this article shows the record of such a condition. The light line is the record of the weight of a rubber web drawn by the Verigraph, but with the face of the instruments covered so the operator was running by his old caliper method. The heavy line shows what the same operator can do on the same stock a few hours later when the Verigraph indicating meter is guiding him in his control. The shaded area between the two curves indicates the saving in raw material.

This saving in dollars of course varies greatly depending on the grade of rubber used and the width and speed of the calender. In the many installations of this instrument at the large tire plants and at the shoe and specialty companies this saving ranges from $25,000 to as high as $100,000 per year.

Some may be interested in a more explicit explanation of just how the weightmeter functions—how a minute change in the capacity of an electrostatic condenser can result in the control of a several-horsepower motor operating the calenders in a rubber mill, for instance.[1]

The fundamental principle by which a very minute variation in the electrostatic capacity of a condenser may result in a readily measurable change of current, is illustrated in Fig. 1. Here we have an oscillator, "A," coupled, by means of the coils "B" and "C," to a tuned circuit "D." Tuning the circuit "D" to resonance with the oscillator "A" results in a deflection of the thermal meter "E." By properly arranging the circuit constants, the sensitivity of the weightmeter, or in this case, the response of the thermal meter, to minute capacity changes, can be any desired amount, from the condition illustrated by the peaked curve, "A," in Fig. 2, where even the very slightest capacity change results in a marked current change, to the other extreme condition illustrated by the low broad curve, "B," Fig. 2.

Now compare the elementary circuit diagram, Fig. 1, with the actual apparatus illustrated in the photograph on the same page of this article. The oscillator "A," coupling circuit "B" and "C," and the tuned circuit "D," are located in the same case. The precision condenser is used to tune the circuit "D" (Fig. 1) into a condition just off resonance. This condition is indicated by the arrow on the side of the curve "A" in Fig. 2. In actual practice, either side of the resonance curve may be employed.

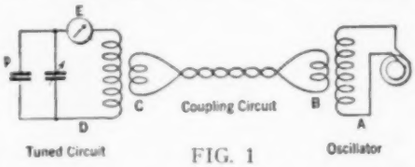


FIG. 1

In parallel with the precision variable condenser are two mechanically adjustable plates forming a condenser. These are indicated by the lettering "P," in the photograph and Fig 1. If the capacitance of this condenser should change, due to a variation in the weight of the paper or other material passing through it, the tuned circuit "D," Fig. 1, either comes more closely into or further out of resonance, depending upon which side of the resonance curve is being used and whether the capacity change is positive or negative, thus changing the reading of the thermal ammeter.

By employing the recording type meter shown alongside the weightmeter in the photograph, a continuous curve may be traced, showing variations in weight of the material with time. A sample curve is shown in Fig. 3. The

[1]This explanation of how the weightmeter functions is identical in part with certain paragraphs of a more extended explanation which the author recently contributed to *Radio Broadcast*, Vol. XI, No. 4, Page 199.

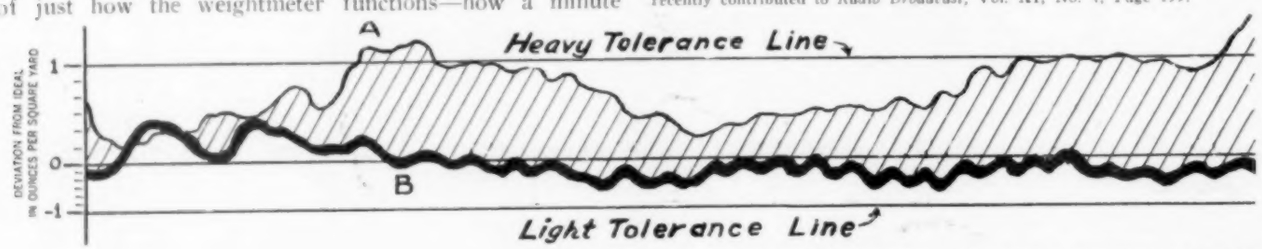
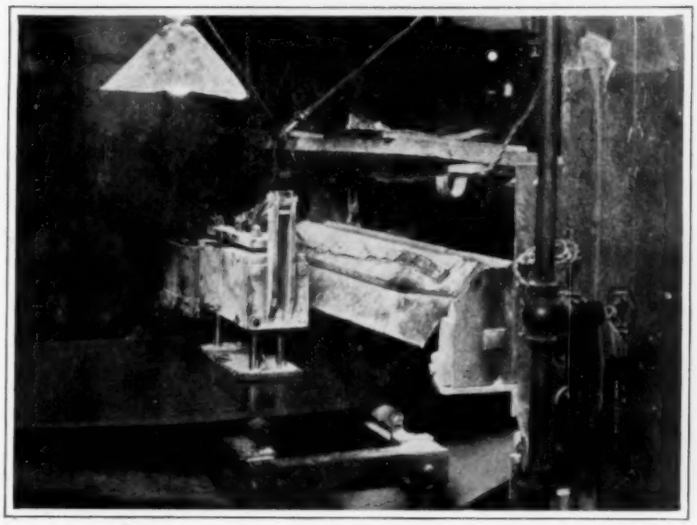


FIG 3. ACTUAL GRAPH OF RUBBER CALENDERING OPERATION—

The straight line in the center represents the ideal weight for the calendered stock. The light line shows the results the operator— heavy line shows how much nearer he came to the ideal weight when he was guided by the uncovered indicator. The shaded area— feeding of new rubber—

straight center line indicates the weight desired to be maintained. The light curve shows a rather wide discrepancy between the weight desired and the results obtained by hand feeding and the old method of actual weighing. The heavy curve indicates the results obtained when using a weight meter control. The shaded area between the two sets of curves illustrates the saving in material effected by the new control method. In addition to the actual saving in material, the product is ever so much more uniform. It will be noticed that the "light" tolerance line is nearer the "ideal" line than the "heavy" tolerance line. This variation in the two linear distances, however, does not represent a difference in upper and lower tolerance weights, but is the result of the changing slope of the resonance curve in either direction.

The many irregularities in the two curves in Fig. 3, are due to "feeding." Every time more rubber is fed, the stock tends to gain in weight, even though the calender adjustments remain unchanged.



VERIGRAPH AT THE CONVERSE RUBBER SHOE PLANT

An installation of the Verigraph in the Malden plant of the Converse Rubber Shoe Company. During the past few months installations have been made in practically every large rubber plant in the country

As a power oscillator of the type used in the weightmeter is in reality a miniature radio broadcasting station, one might imagine that radio reception in the vicinity of a rubber factory in which weightmeters are employed would not be all that could be desired. This apparatus, however, in no way interferes with radio reception. The oscillator is tuned to a wave length slightly in excess of 600 metres so as to be outside of the broadcasting frequency band.

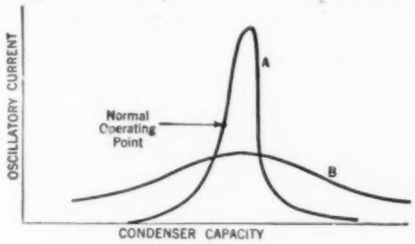


FIG. 2

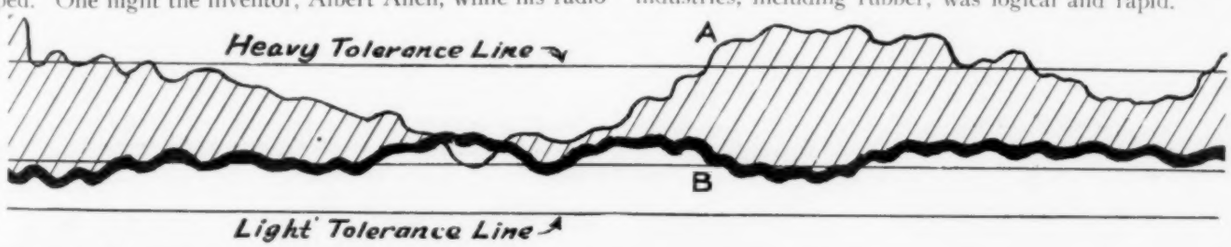
Just what the saving amounts to in dollars and cents when the weightmeter is used depends greatly upon the quality and quantity of material being manufactured. Thus, in the production of a low grade newsprint stock in a low-speed paper making machine, the saving effected per year might be as low as $10,000 or so. On the other hand, where a high-priced stock is being manufactured in a rubber factory, the saving brought about as a result of automatic weightmeter control may be ten times as great.

In one automobile tire factory, the average last year saving per weightmeter employed was approximately $80,000. As this particular rubber company employed many machines, it will be seen that automatic control was of considerable financial benefit, aside from the purpose of aiding in the manufacture of a uniform product.

It was with the thought of applying it to the paper industry that the weightmeter or Verigraph was first developed. One night the inventor, Albert Allen, while his radio receiving set was tuned to one of the local broadcasting stations, took a piece of paper and inserted it between a pair of the plates in one of the tuning condensers that seemed on the point of short-circuiting. The result was that he immediately heard a different station from his loud speaker. As an electrical engineer, he realized that such was as might have been expected. The paper, because of its different dielectric properties than air, had changed the electrical capacity of the condenser, and likewise the wave length to which his set tuned, thus bringing in a new station.

At a later date Mr. Allen, then working in a paper mill, began to study the practical advantage which might be taken of his experience with the piece of paper in his receiving set. As the long strip of newsprint paper passed through the numerous rollers and machines, the foreman from time to time would tear a piece from the strip, mark it and send it to the laboratory. When the report determining the weight per given area of paper came back, the machine was adjusted. The engineer realized at once that such a system was not only crude and costly but also unreliable since all sorts of variations might take place between the tests.

The first working models of the weightmeter which were ready after two years of work were tried out in a paper mill at Bangor, Maine. Redesign was necessary for numerous reasons, but obstacles were gradually overcome until the weightmeter not only recorded the variation in the weight of the stock being passed through, it, but, by means of suitable relays, automatically controlled the paper machines so as to keep the stock at any desired weight. Once perfected, the application of the equipment to other industries, including rubber, was logical and rapid.



--WITH AND WITHOUT THE WEIGHTMETER BEING IN FULL USE.

—obtained when he did not have the benefit of the Verigraph's guidance, the indicator of the instrument having been covered. The —between the light and heavy lines indicates the saving in rubber. The sharp rises of the heavy line above the ideal is due to —into the calender.

Competition Preventing Fair Profit for Rubber Flooring Manufacturers

Many an attractive installation of rubber flooring has failed to yield the manufacturer a profit—Too many of them have resulted in losses—Unless a fair price can be gotten, the quality will inevitably suffer.

Here Is An Analysis of the Common Complaint of Flooring Manufacturers—The Lowered Quality Which Competition Sometimes Induces Is Said To Retard Proper Acceptance of the Product

It is well known that the rubber flooring business has been the source of more worry than profit to the manufacturers who engage in it, despite the fact that rubber flooring should be an increasingly attractive line. The reasons for this condition have not been clear and THE RUBBER AGE *asked one of its readers who has had daily contact with the business for several years to explain why the rubber flooring business is unprofitable. The following article is his reply:*

THERE are several reasons why the rubber flooring business as conducted today and in the past is and has been unprofitable to the manufacturer, but the principal one is the fact that cut-throat price competition has held sway ever since the inception of the present-day type of marbleized tiling.

True, competition with other floor covering materials, principally the good grades of linoleum, necessitates keeping the cost to the consumer at a minimum, and there is also such a thing as putting the prices so high that few would buy and the volume of business would be negligible. However, there is a happy medium between that point and present-day quotations at which both sufficient volume and a fair profit to the manufacturer would be assured.

If each manufacturer would seriously analyze his costs it would help a great deal. In general, today, all rubber manufacturers are paying more attention to their costs than they did years ago, but that alone is not enough. They must also do the logical thing of fixing their selling prices at such levels that each and every job will show a profit. In the final analysis, stockholders put money into the business with the natural expectation that they are going to receive a fair return on their investment, and when those responsible for the conduct of the business, by disregarding their costs, lose money instead of making a fair profit, they are not serving the best interests of those by whom they are employed.

It is commonly known in the rubber flooring business that few, if any, of the producers are allowing a sufficient differential between the factory cost of the material and the price asked for the finished installed job. The fact that some manufacturers lay their own tile while others seli only the material to jobbers who have laying organizations somewhat complicates the situation, but it should not prevent any manufacturer, regardless of his method, from assuring himself a reasonable percentage of profit.

When compared with some other lines of the rubber industry, the manufacture and sale of flooring should be particularly profitable. It could be made a stable, clean-cut, large-volume business, but the way it is tending at the present time will never make it so. With the existing price competition compelling the producers to lower the quality of the goods, there have been indications on the part of some architects and contractors, building owners and others, that they do not care to consider rubber tiling in their plans.

If the reputable manufacturers would just disregard those who would put rubber tiling in the "cheap" class of flooring materials, maintain their best qualities, sell them at a fair profit and install them the very best they know

(*Concluded on Page* 492)

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Rubber Flooring Business Unprofitable

(*Continued from Page* 490)

how, it would not be long before those who are putting out inferior goods would have to change their policies or get out of the business, because rubber tiling is one of those items on which there is sure to be a "come-back" if it has not proven itself in service, and those "come-backs" usually mean replacement of the job, with all of the expense incidental thereto. Several manufacturers today are striving to do that very thing, but the industry as a whole is not giving them much support.

As intimated in the foregoing, the producers know their costs, at least the factory cost of their material, but they either do not know or in fixing their prices they are totally disregarding their costs beyond that point. A comparison of the manufacturing or conversion cost, that is the cost of converting raw material into a finished, cut-to-size piece of tile, with the prices that are being quoted on installed jobs, is the best answer to any question as to why the tiling business is unprofitable.

There have been instances where quotations have been made on both small and large jobs that have been only a few cents over the average manufacturing cost, and this is particularly true when the better quality brands of tiling are required to meet the competition of inferior grades. A careful analysis of laying costs alone should readily prove to the satisfaction of any manufacturer that a few cents margin between the cost of his finished material and selling prices is not sufficient to cover administrative, selling and installation expense. This applies as much to the manufacturer who sells through distributors or layers as to those manufacturers who lay the tile themselves, because it is incumbent upon them to see that their connections do not make the business unprofitable for the trade as a whole, although, in laying costs, the jobber has an advantage over the manufacturer who does his own laying, in that he is in a position to keep his crews busy on other work.

Considerable Margin is Necessary

Take into consideration the expense of maintaining a laying crew. It often has spare time between jobs. There is time consumed in travel and the men must be paid for that time at the full union rate. Add traveling expense and the many other factors involved. Add the cost of cement, time lost due to the physical characteristics of the job, the cost of replacing stolen or lost material, which, incidentally has become an important problem, and it should not be difficult to realize that all of this expense, plus administrative and selling costs, cannot be covered by adding a few cents to the factory cost of the tiling.

Another problem which requires attention is how, in quoting prices, properly to care for the difference in cost between light and dark colors. There is a material difference in cost between tile having a basically dark color and a tile with a basically light color, the latter being about 10% more expensive, but regardless of this fact some manufacturers quote one price for both, and judging by current quotations that figure must be based on the cheaper material. It would seem that if a buyer decided that the greater part of his job was to be done in light colored tile, that manufacturer would stand to have his profit reduced.

There is no gainsaying the fact that the present-day type of rubber tiling is a big improvement over the products of years ago, particularly from the standpoint of beauty, resiliency and comfort, that the manufacturers are learning every day how to better make and better install the material, and that there is a constantly increasing number of people who appreciate the superiorities of rubber flooring over other types of floor coverings. It would accordingly seem to be entirely within the hands of the manufacturers themselves to decide whether they are going to make the business a permanent, profitable one or whether it is going to be allowed to languish because of uneconomic policies.

Grasselerator 833

The rubber service department of the Grasselli Chemical Co., N. Y., has announced a new low temperature accelerator, a liquid aldehyde amine condensation product, which is said to be efficient at 14 pounds steam pressure (248° F.). The accelerator is known as Grasselerator 833.

According to its producers, 833 retains its activity in the presence of carbon black and also acts as an anti-oxidant. It gives a high modulus and tensile. Its curing curve is flat and curing range is wide, the rate of cure increasing constantly with an increase in temperature. 833 is adapted for open air steam cures and gives excellent physical properties to reclaimed rubber stocks.

Tests conducted to show the effect of varying the amounts of 833 showed that when 1 part of the accelerator is used in the following formula: rubber, 100; carbon black, 25; ZnO, 5; sulphur, 3, the loads at 400, 500 and 600% elongation were 2,010, 3,180 and 4,520 pounds per square inch respectively, with a 45-minute cure at 140° C. The same stock cured at 120° C. gave the following results: 900, 1,780, 2,960 and 4,500 at 300, 400, 500, 600% elongation respectively. When ½ part 833 was used in the formula, the loads at 300, 400, 500 and 600% elongation were 705, 1,325, 2,205 and 3,350 pounds per square inch after a 60-minute cure at 140° C.; and using ¼ part of accelerator the following results were obtained: 530, 1,000, 1,620, 2,440 at 300, 400, 500 and 600% respectively after a 120-minute cure at 140° C.

Ageing tests with the same compound (using 1 part of 833) cured for 30 minutes at 284° F. showed an original tensile of 5,300 pounds, reducing to 3,700 after 3 days in an ageing oven whose temperature was maintained at 70° C. After 6 days the tensile was 3,500, 8 days, 1,500 and after 10 days it was 1,000 pounds. The per cent elongation for this compound varied from 650 to 225 over a similar period.

When the same compound, less the carbon black content, was cured for 25 minutes it showed an original tensile of 4,600. After 3 days no change in tensile strength was found, but a gradual decrease to 4,000 took place after 6 days. The tensile was the same on the eighth day and at the end of 14 days it tested at slightly less than 3,600. Per cent elongation was steady from an original of 680 to 590 after 14 days.

Rubber Cement As Glue Substitute

Rubber cement as a substitute for glue, paste or mucilage is being actively pushed by the Fiat Specialties Company, New York City. The company claims that rubber cement when applied for adhesive purposes, does not warp, shrink, curl or stain paper, cardboard or muslin, and is the only adhesive which will permanently hold these materials to metal. It is said that the rubber cement, which is both odorless and transparent, does not change the natural color of the paper. It may be applied with a brush and dries quickly. The dried cement, where not desired, may be rubbed off with one's finger, leaving no mark.

Rubber cement sells on a retail basis at approximately the same cost as mucilage or paste.

The New Era in Development of Automotive Rubber Parts

Not Only Has the Familiar Shock Insulator Reached a New Standardized Design, But Rubber Under Compression Serves in Many New Places, Including a Unique Paving Block

RUBBER shock insulators have played an important part in the development of Mack trucks and buses to their present degree of efficiency, but it is not always realized that considerable improvements have been made in such rubber parts during the years that they have been used. Also, the rubber insulator has been applied in other ways in the Mack products, as well as in automotive vehicles of other manufacture, and some of these uses have not been widely explained and illustrated.

The rubber shock insulator was designed to replace the steel shackle with bushings, bolts and other parts in order to eliminate certain disadvantages which always accompanied the use of such equipment. It was seen that some sort of insulation could be used to render unnecessary the frequent replacement of steel parts, and to eliminate spring breakage, noise from squeaks and rattles and the need for constant lubrication. The unique property of rubber to dampen vibrations and store energy naturally led to its selection as an insulating material. There is no known substitute for rubber as a shock insulator.

The original type of rubber shock insulator for spring ends is shown in the top row of Fig. 1. These insulators were the first ones put into production and were used, and still are by the International Motor Co. in their Mack Model AB trucks. They proved to be a tremendous improvement over steel shackles. This particular design has the advantage of requiring but two different rubbers per truck, one size for front springs and one for rear springs. The insulators cannot be assembled incorrectly on the ends of the springs.

The important feature of design, which is responsible for the success of all insulators, is found in these first insulators. This feature is that the rubber is assembled under initial compression. In other words, the rubber in the free state before assembling is larger than the space into which it fits, namely, the metal housing and its cap. The amount of compression as compared to the volume and shape of the rubber used, and the weight to be carried, is one of the most important considerations.

There are, nevertheless, certain fine points of design lacking in the original rubbers which led to the development of improved rubber insulators for the Mack Model AB bus. These are shown in the middle row of Fig. 1. Here different rubbers are used at both ends of both front and rear springs. The arrangement is known as the "full-floating" design. A special shape of rubber is used at the front ends of each spring to provide for a fixed end mounting. The rubber is tightly compressed and enclosed in the container to prevent movement at this end. The rear ends of the springs are mounted in different type rubbers and room is provided for movement of the rubber insulator as with a steel shackle. The front of the housing through which the spring enters is almost entirely open and sufficient space is provided at the rear of the housing to allow

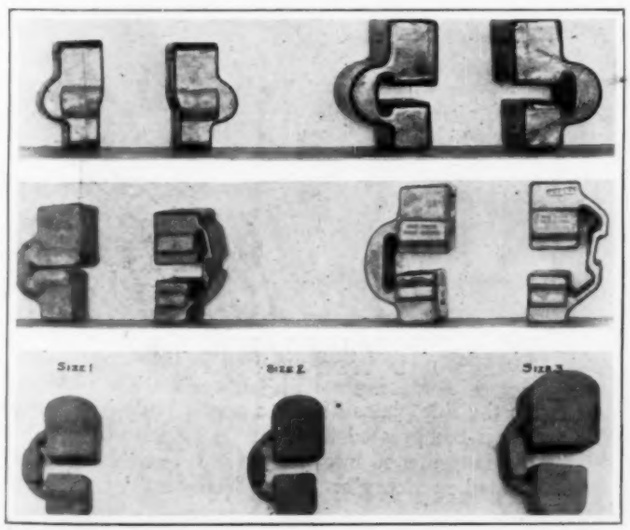

FIG. 1—THREE STAGES OF INSULATOR DEVELOPMENT

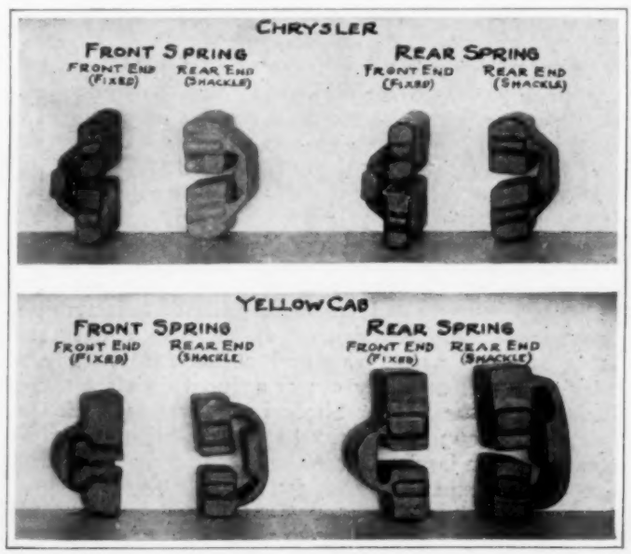

FIG. 2—PASSENGER CAR AND TAXICAB INSULATORS

the spring to elongate and shorten due to difference in camber.

This design has three important advantages over that of the first design. These are better riding, better driving conditions and better brake conditions. Continued work still further to improve the two designs has now led to

FIG. 3—TORQUE INSULATOR

what Mack engineers term the new standardized design which they feel fittingly culminates their seven years of experience with such rubbers.

The new standardized design incorporates the good features of the earlier models in such a way that additional advantages are secured. Assembly of the rubbers under compression is of course retained. The newest rubbers are also of the "full-floating" type. The one-insulator feature of the original design, obviously advantageous both from service and engineering viewpoints, has also been incorporated.

The standardized rubbers number three in all as shown in the bottom row in Fig. 1. These three take care of all models of trucks and buses, all tonnages and all spring widths for semi-elliptic constructions, whether Hotchkiss or radius-rod drive is used. Special constructions, such as six-wheelers, would possibly require different insulators.

Technical data for these three rubbers is as follows:

Size	Part No.	Area in Sq. In.	For Normal Static Spring Load of (Lbs.)	Weight each in Lbs.
I	13AK31	11.25	1500	4.1
II	13AC326A	14.38	2000	5.1
III	13AK32	21.93	3000	8.7

The success of the rubber shock insulators on Mack trucks and buses was so outstanding that manufacturers of passenger automobiles showed a desire to adopt them. Many manufacturers have now been licensed to apply the rubber shackles and they are being used satisfactorily on many cars. The Rubber Shock Insulator Corporation, of Bridgeport, Conn., was formed to handle this phase of the situation. The insulators used by the Chrsyler car and the Yellow Cab taxicab are shown in Fig. 2.

The first insulators used by Mack were not the best from the standpoint of appearance. The later designs show improvement in this respect, but they cannot approach the pleasing appearance of the passenger car installations. These rubbers are small and when compressed in neatly designed housings with generously rounded corners, they blend into the contour of the frame and body in a manner impossible with the steel shackle. The difference in requirements of service between the trucks or buses and pleasure cars accounts for the differences in sizes and design.

The Yellow Cab Co. was the first to adopt the rubber shock insulators for taxicabs and has effected considerable savings from their use. Spring breakage has been remarkably reduced. The Louisville Taxicab and Transfer Co. has kept actual records of cost of maintenance on 10 cabs not insulated as well as on 10 cabs that were insulated. After several months a comparison showed that the maintenance cost per mile for the insulated cabs was only .49 cents as compared to .62 cents for the non-insulated cabs. This is a saving of more than 20%.

In addition to the adaption of rubber shock insulators, or rubber under compression, to spring shackles, the International Motor Co. has adapted them to chassis unit insulation. They can be used for the supports of motors, transmissions, radiators, tanks and other units to absorb vibration and torque and prevent them from being transferred to the frame and body and also from one unit to another. On one Mack model insulators are used at 30 points.

A torsion insulator has been developed which is placed in the drive shaft line between motor and transmission, eliminating the universal joint and providing a means of absorbing the motor torque and preventing it from being carried on to the transmission. As is seen in Fig. 3, a series of these rubbers is mounted in circular fashion between the driving and driven members. Since this unit absorbs the torque, it does away with the variation of torque which was formerly transferred to the transmission, thereby causing transmission noise. Naturally, where there is noise, there is wear and consequently a detrimental action.

Rubber shock insulators for supporting the radiator have also been developed and are shown in Fig. 4. Lugs

FIG. 4—RUBBER INSULATORS USED AS RADIATOR SUPPORTS

attached to the side plates fit into a specially designed insulator which is compressed into the steel housing when the housing cap is tightened into place. This protects the radiator from road shocks, vibration and stresses due to frame deflection.

To designate just another of the many places in which the insulators are used on the Mack truck, one might point to their use in the transmission supports. Extensions of

(*Continued on Page* 496)

Rubber in World Politics

Institute of Politics Is Told That Rubber Development in the Philippines Must Be On Basis Agreeable to Filipino Leaders or They Can Nullify All Efforts—British Speaker Defends Restriction

IT is only within the last four or five years that rubber could have been discussed at an international political gathering without occasioning some surprise. These last years, however, have put such a changed light on the international relationships of rubber that this commodity, produced principally in one district and consumed principally in another, figures in almost every broad political discussion. The annual Institute of Politics at Williams College, Williamstown, Mass., has come to include rubber in the agenda of each of their gatherings,

During the 1927 Institute, which has been in session at Williamstown, the references to rubber have come from two main sources and have touched on the most interesting phases of the crude rubber supply. The Philippine question and its bearing on the rubber supply naturally deserved and got a complete hearing. Professor Ralston Hayden of the University of Michigan conducted a round table discussion on this topic, a part of his remarks being as follows:

Professor Hayden on Philippine Rubber

FILIPINOS and Americans agrees that the latent rubber resources of the Philippine Islands should be developed. Heretofore they have differed as to the conditions under which this development should take place. Until they are in accord upon this subject, rubber will not be produced in large quantities in the Philippines. The United States will continue to depend upon foreign sources for this vital commodity and millions of Filipinos will remain uneducated, diseased, and poor because their government lacks the funds which successful rubber plantations would supply the state in the form of taxes.

Those Americans who say "imperialism" and "exploitation" at every suggestion of the participation of American capital in producing large quantities of rubber in Mindanao and Sulu are either ignorant of the vital needs of the Filipino people or are indifferent to them. They, also, apparently, are unaware of the fact that the Filipinos today possess powers, political and otherwise, sufficient to render unprofitable any large rubber investments to which they are seriously opposed.

If Congress, going over the head of the Philippine Legislature, were to remove the 2,500 acre limit on the acquisition of rubber land it is highly probable that the Filipino leaders, by means of the wide control which they exercise over every agency of government in the Islands through their ability to arouse the animosity of their people against American rubber growers, and through the uncertainty which they could create as to permanent American support of forcible exploitation, could prevent or make unprofitable any investment of American capital.

The representatives of one of the largest American consumers of crude rubber made every effort to come to an agreement with the spokesmen of the Philippine Legislature as to the conditions under which they should make an initial investment of $1,000,000 or more in the southern islands of the Archipelago. They failed to reach such an agreement and went to Liberia to grow rubber. This incident illustrates the practical fact as things stand now the Filipinos are virtually able to dictate the conditions under which Americans shall participate in rubber production in their country. Production, therefore, must be preceded by Filipino-American agreement upon those conditions. This statement is based upon the assumption that Congress is not going to withdraw the wide powers of government which the Filipinos now possess.

The chief concrete differences between would-be American investors in the Philippine rubber areas and the Filipinos have been as to the amount of land which might be leased to one company, the period for which the lease should run, and the ultimate title to the property. The Americans naturally demand larger areas and longer leases than the Manila Legislature has been willing to permit.

In his report to President Coolidge, Colonel Carmi A. Thompson declared that while it is apparent that rubber can and should be raised in the Philippines by small planters, it will probably be necessary to encourage the development of a few large rubber estates in the beginning. Such estates, Colonel Thompson states, would establish a local market for small producers, aid in solving many of the technical problems of a new industry and generally produce a feeling of confidence in the future of rubber production.

Refers to the Thompson Report

Colonel Thompson, however, apparently did not mean estates of millions of acres, but rather areas of moderate size, for he added that any necessary changes in the land laws should be made by the Philippine Legislature. "This body," he declared, "is in a position to keep within reasonable limits the amount of land held by large companies, and otherwise protect the interests of the Philippine planters who may be expected to develop small plots when the market is established."

After his return to this country, Governor-General Leonard Wood was quoted as having stated that he has recommended to the Filipino Legislature measures to foster the industry, providing for leases of areas covering 150,000 acres of tillable area and deeds contingent upon cultivation for a period of years. It is significant that neither the Governor-General nor the President's personal investigator even intimates that the control of the native legislature should be impaired or that their hands should be forced.

In the Dutch and British possessions in the East, native-owned plantations cover some 1,480,000 acres, or one-third of the total planted. They have brought prosperity to the peoples of those countries. The native development, however, following the establishment of the industry by Europeans. There is no reason why, even with American leadership in development, the native holdings in the Philippines should not be, proportionately, much greater.

I have asked many Filipinos both within and without

the rubber areas why they did not grow rubber, or invest in rubber developments. The answers invariably were that the future of rubber was uncertain: that they did not know the business, that there was no certain market in the Islands, or they could not afford to wait five years, or more, for returns on their investments. The Iowa farmer would make much the same replies to suggestions that he supplant corn with an untried crop. To these reasons should be added that of Filipino lack of business initiative, and, of course, the fundamental obstacle of the uncertainty as to the political future of the Philippines, especially Mindanao and Sulu.

The essential facts about rubber in the Philippines, therefore, seem to be these:

The islands are capable of producing large quantities of the commodity to the mutual advantage of themselves and the United States. The Filipinos unaided cannot achieve this production, but they are in a position to make it impossible for Americans to do so. The existing political situation is the chief obstacle to an agreement between the two interested parties as to the conditions under which rubber development shall proceed. Like almost every other question which concerns the Philippines this situation indicates the necessity of the early establishment for the Islands of a more certain political future, which, if possible, should rest upon the basis of American-Filipino agreement.

Sir Arthur Willert Defends Restriction

ALMOST as inevitable as the Philippine question in the Institute of Politics discussion was some reference to the restriction of rubber exports from the British colonies. This came in the first lecture of Sir Arthur Willert, a British expert on foreign affairs, who discussed present political viewpoints of British statesmen. In regard to their handling of the crude rubber question he said:

"Since the British conversion to the open door in China, I think I can say we have stood everywhere for equal opportunities for everybody in matters of trade.....

"What about rubber, then, some of you may be asking yourselves? What about those restrictions upon the output of that essential commodity of which we all have heard so much. In regard to that, one has, of course, to plead guilty to Government interference. But let me assure you that it was not the malignant interference which it was sometimes represented to be against the American rubber interests.

"What we did was, after the great slump in rubber prices in 1920: to enforce a scheme under which producers should only export a certain percentage of their standard production. But a scale was arranged whereby, as prices rose on account of this restriction upon the sale of rubber, the amount exported from our rubber growing territories should be automatically increased. The restriction was necessary to save many rubber plantations from ruin and from being turned back into the jungle. It is indeed highly probable that without the restriction, rubber today would, owing to the disappearance of many plantations, stand at a higher figure than it does.

"And, in any case, the restriction was not discriminatory. It operated against the British rubber people of the United States or of any other country. During the years that I was in Washington, the Department of Agriculture often preached the reduction of the acreage of cotton in the South by means of diversified farming, and I believe that since then there has been quite a campaign to restrict the cotton acreage, frankly in order to keep the price of cotton up. No foreigner has any right to criticize this campaign.

"The United States is obviously at liberty to raise as much or as little cotton as she likes, but in practice anything that increases the price of the American cotton crop reacts at once upon the prosperity of the Lancastorshire textile districts. I repeat that I am not for one moment grumbling at your doing what you like with your own economic affairs, but I would submit, to support the general line of my argument, that we have no national policy which prevents free trading so much as your policy of high protection, and that when it comes to trade discrimination, anything that you may do to raise the price of cotton works out in practice as a more direct and damaging discrimination against us than anything that we may have done to restrict temporarily the amount of rubber upon the markets of the world does against you."

Development of Automotive Rubber Parts

(*Continued from Page* 494)

the end-plates form steel support beams seated in four rubber shock insulators mounted on the frame.

Other important points at which rubber shock insulators are used include the steering gear, gas tank and motor suspension. The steering column is insulated at two points and the wheel itself is of yielding rubber. The gas tank is suspended in a cradle mounted on three rubber shock insulators. The engine rests upon four rubber shock insulators. Mack engineers feel that they may be able to use rubber in still other ways. One idea is to construct bus bodies sectionally and use rubber in the joining.

One of the latest adaptions of the compressed rubber idea is that of the rubber paving block. This is being tried out at the plant of the International Motor Co. This block

FIG. 5—RUBBER PAVING BLOCK

is merely a cube of rubber assembled in a metal band and held under compression. It is shown in Fig. 5. These blocks are laid as are any other paving blocks on a suitable base, such as concrete, with a binder or grout between them.

The blocks as used for tests by the International Motor Co. are 2x2x1-15/16 inches, containing 7¼ cubic inches and weighing ½ pound. The cost per block has been figured at 7¾ cents, equal to 1 cent per cubic inch. On this basis, the cost per square yard of these blocks, exclusive of grading, filling, laying, etc., would be $25.11. From tests it is estimated that a road built of these blocks would last thirty years which would be expected to offset the high original cost. The advantages of rubber paving are well known. Small test areas of the compressed rubber paving have been in daily use at the International plant for two years and show almost no wear.

A Page of Timely Rubber Trade Items

New Michelin Tire Being Tested

The new Michelin "Confort Bibendum" equipment, consisting of a tire, tube and rim which was announced by the Michelin Tire Company of Clermont-Ferrand, France, in November of last year, is gradually being introduced throughout the continent of Europe and in England. Quite recently the "Bibendum" tire was demonstrated in England and reports from Italy and Belgium indicate that similar demonstrations have been held in these countries.

In Italy the Michelin tire was tried out on a heavy Renault car going at full speed. According to the press reports, when a blow-out occurred, the car did not swerve nor did the tires leave the wheels. In Belgium the "Bibendum" tire was introduced during the first quarter of the present year, but so far, according to trade advices, has not proved the advantages claimed by the manufacturer.

The Michelin "Confort Bibendum" equipment consists of a rim, casing and inner tube, the former consisting of a single piece with no movable part. It has two straight edges to engage the beads of the casing. In the region of the valve hole a channel or depression is made in the rim. The depth of the channel is greatest at the valve hole, and decreases gradually until it disappears at a point somewhat below the center of the rim on both sides. The inner tube designed for use with this rim differs from ordinary tubes only in the elbow form of the valve stem and the thick rubber pad applied at the base of the valve. The equipment is made in new, special sizes.

The Michelin Tire Company claims that the "Confort Bibendum" has an advantage over clincher rims in that the tire is absolutely locked in place but is easy to mount and demount. Compared to straight sides, the Bibendum is claimed to be simpler, having no flaps or locking rings, and is water tight. In the comparison with the drop-center rim, the Michelin rim is said to be more secure.

In France the "Confort Bibendum" is proving successful on the market. The number of failures is believed to be small in comparison to the large number actually in service. It is reported that Michelin has made arrangements to supply certain automobile manufacturers, notably Citroen, with wheels and rims at a very low figure, these requiring the "Confort Bibendum" tire. The patents covering this tire are not now available to the tire industry generally. Several tire manufacturers in France, it was said, would be quite ready to put out a similar and competitive product if they did not fear possible infringement with existing Michelin patents.

A full description of the "Confort Bibendum" with drawings appeared in THE RUBBER AGE for December 10, 1926.

Seven Years of Rim Production

According to a report of the Tire and Rim Association of America covering a period of seven years in accumulated rim production, the number of rims inspected and approved by the Association in this period totaled 133,483,499, of which 0.5 were motorcycle rims, 29.6 balloon, 67.2 high pressure, 2.9 truck and 0.2 millimeters.

In this same report the Tire and Rim Association has furnished figures relative to rims inspected in the years from 1922 to 1926 and also the first six months of 1927. From this report it appears that 16,297,785 rims were inspected in 1922: 23,140,620 in 1923; 21,863,311 in 1924; 26,001,664 in 1925; 24,199,524 in 1926, and in the first six months of the current year, 11,412,974.

Tire Pressure Equalizer

A new automobile accessory, known as a tire pressure equalizer has been placed on the market in England by the Houdaille Hydraulic Suspension Co., Ltd., London. The difficulties incident to maintaining equal air pressure in

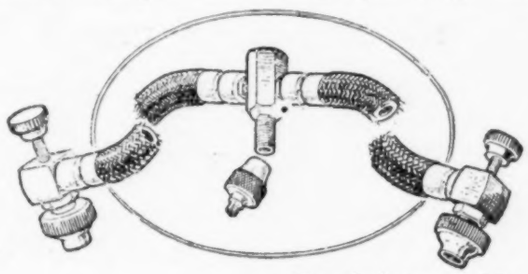

Illustration by courtesy of *The Motor*.

balloon tires, are obviated, according to the manufacturers, by the tire pressure equalizer. The Houdaille equalizer consists of a length of reinforced rubber tubing with connections at the ends of the coupling to the valves of two tires, and a connection at the middle to which either the pump or a pressure gauge may be attached. (See accompanying illustration.)

When the connections have been made with the tires, two small screws on these connections are operated to depress the plungers of the valves, the two tires being then in free communication with one another. When the connections have been made in this way, both tires automatically come to exactly the same inflation pressure.

U. S. Leads in Tire Exports

With the exception of January, the United States for the first half of this year, has led the tire manufacturing countries of the world in exports, the monthly exports exceeding those from France during five of the six months, according to comparative figures recently made public by the rubber division of the Department of Commerce. Although tire shipments from the United States exceeded those shipped from France in 1922, the latter country has held the lead from 1923 to 1926 by a small margin in each year.

Has Made One Billion Heels

Since the Goodyear Tire & Rubber Co. started to make their "Wingfoot" rubber heels, the company has manufactured enough heels to supply each man, woman and child in the United States with about five pairs, the record of production having now reached 500,000,000 pairs, or one billion heels. This statement comes from the Goodyear statisticians soon after they had announced that Goodyear had completed its hundred millionth automobile tire, both records being achieved in the same year.

Correction

Due to a typographical error, it was stated in the last issue of THE RUBBER AGE that Safex, the new accelerator being introduced by the Naugatuck Chemical Company had "been found to be toxic to workers." Just the opposite is the case. The Naugatuck Chemical Company states that after prolonged tests Safex has been found to be non-toxic to workers, and it is offered to the rubber industry with complete assurance of that quality.

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EDITORIAL COMMENT

Keen Competition

THE number of contracts for new buildings which are now being let by tire manufacturers recalls the years immediately following the post-war boom and the cry that went up at that time about the industry being "overbuilt." Expansion in plants and equipment during the war was notorious and for good reason. When the war-time demand had passed, the rubber industry, like all the others, was left with a surplus of productive facilities. The keen, even destructive competition in the tire industry began immediately. Anyone who wondered at it was immediately told: "Here is an industry facing a demand for perhaps forty million tires. It has facilities for readily producing not less than seventy-five million tires. Do you wonder that there is such a scramble for business to keep these plants busy and that a good many companies are being hurt while the scramble goes on?"

Those who deplored such a situation saw two prospects. One was that some of the productive facilities would disappear, the principle of the survival of the fittest being observed. The other prospect was that demand would so increase within a few years that all of the plants and equipment could be used to advantage.

The first of these prospects has materialized only to a limited extent. Plants that have not survived under one company have frequently been brought back into production by some other company. The more satisfactory solution, that of an expanding market, has also worked out. But as this solution is achieved a third factor enters which nullifies it—namely, a great increase in the already adequate production facilities.

Of course there can never be exact balance between productive facilities and demand, but the two might certainly come closer than they are today in the tire industry. The mad fight for volume which is responsible for the present disorganization of tire distribution shows the lengths to which some companies must go to keep busy the facilities which they already possess. Less ambitious concerns struggle just as hard. The results for all of them are unsatisfactory. Demand will grow, but more factories spring up before it can come. Keen and even keener competition appears to be the lot of the tire industry for years to come.

Dividing the Responsibility

A EUROPEAN observer who has recently spent several months in studying the rubber industry in the United States has expressed the opinion that the efficiency in production which is outstanding in the industry is due to the interested attitude which subordinate employees of all grades are led to take. He thinks their interest in their work arises principally from the greater degree of responsibility which is given them and which they accept willingly and even gratefully.

Giving a full measure of responsibility to subordinates is a policy that appears to be more American than European. In a German rubber company, the observer points out, there is much less likelihood of responsibility being delegated to assistants, foreman or workers. Following a custom that is ages old, the few top executives put upon themselves the responsibility not only for the final progress and prosperity of the company but also for the day to day conduct of the various departments. This naturally leads to every assistant looking to one office for guidance on even small matters. The habit of individual responsibility therefore never has an adequate opportunity to develop.

Deprived of responsibility or of any feeling that he has an effective part in the results which the company finally achieves, the employee is less concerned about his work. Certainly he finds less enjoyment in it and regardless of his skill or inherent spirit, he comes to regard the plant merely as a place to work.

In many American rubber plants, both large and small, there is a spirit that is almost scholastic in its loyalty and vigor. The responsibility for keeping the company's name and products in the lead extends down the line until the humblest worker feels it. Most American workers, the observer saw, look forward to the day's tasks and responsibilities with pleasure—in short, they enjoy their work and turn out more and better products as a result. Many companies spend large sums of money on house organs, athletics and in other ways to stimulate company spirit. An even greater stimulus comes from the delegation of real responsibility. Probably in naming that factor the observer named the most powerful factor in America's efficient and economical production.

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Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

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BUILDING EQUIPMENT

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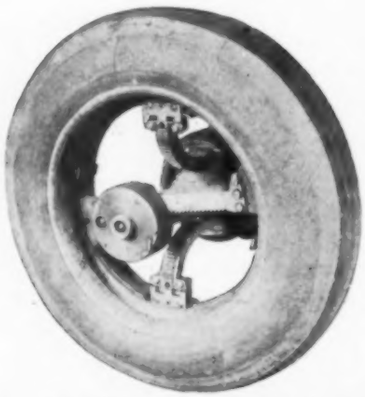

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NEWS of the INDUSTRY

Financial—Business
Building Operations
Personals
New Products

FARREL BIRMINGHAM MERGER IS PROPOSED

Stockholders of Two Important Builders of Rubber Mill Machinery Are Asked to Vote on Directors' Proposal—No Radical Changes Are Contemplated.

Notices have been received by the stockholders of the Farrel Foundry & Machine Co. of Ansonia, Conn., and Buffalo, N. Y., and the Birmingham Iron Foundry of Derby, Conn., wherein the directors of these two companies recommend to their stockholders that the two companies be merged into a new company to be known probably as the Farrel Birmingham Machinery Corporation. Stockholders' meetings have been called for September 20 to take action on the recommendation. It is anticipated that the merger will be approved.

It is understood that no radical changes are contemplated and that the new company will be managed by the same active managers who are at present operating the two companies. One of the principal objects of the proposed merger is said to be the effecting of material economic savings in engineering, selling, development, traveling and other heavy expenses which, by the nature of things, have had to be duplicated in the past at a distinct economic loss.

Merger Will Aid Customers

Officials of the two companies believe that an amalgamation of this type is logical at this time and quite in keeping with the trend of things in modern industry and commerce. They also feel that such an amalgamation will make possible even greater and more satisfactory service to their customers by having a greater flexibility in plant and plant equipment to assure uniform and prompt deliveries. The combining of the engineering, research and development talent of these two experienced concerns, which have been leaders in their lines for nearly one hundred years, is expected to result in a greater service to their customers on sound economic lines.

Some of the larger companies in the rubber industry who have been important customers of the two machinery companies in the past are said to look very favorably on the proposed amalgamation in the belief that it will be a distinct asset to the rubber trade. A similar feeling will probably be found in other industries which have been furnished mechanical equipment by Farrel and Birmingham for many years.

Stokes in South America

Robert J. Stokes and family, of Trenton, N. J., are spending two months traveling through South America and will return in the fall. Mr. Stokes is president of the Thermoid Rubber Co., Trenton, N. J.

Rubber Head is Candidate

Edgar H. Wilson, formerly one of the owners of the Dural Rubber Co., Flemington, N. J., has announced himself as a candidate for the election as a delegate to the Republican National Convention next year.

H. B. Tobin Sails

Horace B. Tobin and his family recently sailed for Europe and will spend some time in motor travel through several foreign countries. Mr. Tobin is president of the Woven Steel Hose & Rubber Co., Trenton, N. J.

Huber Sails Abroad

H. W. Huber, vice-president and general manager of J. M. Huber, Inc., New York, manufacturers of carbon black, sailed for Europe on the *Reliance* on Saturday, August 13. Mr. Huber will visit Great Britain and many continental countries where he will call on the firm's representatives. He is expected to return to the United States in about three months.

Vansul Sends Out Memo Pad

An attractive desk memorandum pad has recently been sent out to the rubber trade by Vansul, Inc., New York City, distributors of rubber colors and pigments. The pad is 4x6 inches and is arranged to hold a quantity of memorandum slips. A brass plate attached to the top of the pad shows the firm trade mark and lists the products sold to the rubber industry.

Whiting D. C. Locherty

Whiting Dale Cowles Locherty, purchasing agent for the Revere Rubber Co., of Chelsea, Mass., died recently in North Conway, N. H. Funeral services were held from his late residence in Malden, Mass. Many officials of the U. S. Rubber Co., of which the Revere Rubber Co. is a subsidiary, attended the services.

U. S. RUBBER CO. SALES AND PROFITS DECLINE

Sales Value of Goods Sold in First Six Months of 1927 Was $12,003,360 Less Than in Corresponding Period of 1926—Net Income Falls to $3,240,963.

Sales of the United States Rubber Co. for the six months ended June 30, 1927, amounted to $88,110,626, a decrease of $12,003,360 as compared with the corresponding period of last year. This decrease was said by Chairman C. B. Seger to be due principally to a reduction of over 28% in prices of tires sold to automobile manufacturers and to a reduction in unit sales of tires to such manufacturers.

Net income, before interest on the funded indebtedness, but after all other charges, amounted to $6,392,651. Interest on the funded indebtedness amounted to $3,151,688, leaving net income of $3,240,963 after all charges. During the first six months of 1926 the net income after all charges including interest on the funded indebtedness amounted to $4,915,668; the comparable figure in 1925 was $5,875,204. These figures do not include any income from rubber plantations owned by the United States Rubber Co. In achieving the stated net income in the first half of the current year, however, the raw materials reserve of $8,535,380, which was created at the close of 1926, was partly responsible since it has been applied against inventories.

Letter to Stockholders

Chairman Seger's letter to the stockholders of the company included the following comment:

"Sales for the six months ended June 30, 1927, amounted to $88,110,626, a decrease of $12,003,360 compared with the corresponding period of last year. This decrease was more than accounted for by an average reduction in selling prices of over 16%.

"There was a substantial increase in unit volume of sales of commodities other than tires, constituting about two-thirds of the total sales, which practically offset the reduction in selling prices of these commodities, averaging over 12%.

"Tire sales other than to automobile manufaturers increased in unit volume, which, however, was more than offset as to dollar volume by a decrease in selling prices of over 25%.

"The decrease in total sales as stated above was due principally to a reduction of over 28% in prices on tires sold to automo-

bile manufacturers, and to a reduction in unit sales of tires to such manufacturers.

"Net income, before interest on the funded indebtedness, but after all other charges, amounted to $6,392,651. Interest on the funded indebtedness amounted to $3,151,688, leaving net income of $3,240,963 after all charges. This does not include any income from rubber plantations owned by the company.

"The business of this company, by reason of the nature of the commodities handled, is subject to seasonal conditions and is necessarily conducted and must be considered on a yearly basis. Therefore, the results for any period of less than a year are not conclusive.

"The reserve of $8,535,380, created at the close of last year, has been applied against inventories, and the results above stated were affected thereby to the extent applicable to the goods sold during the first six months of 1927.

"The accumulated surplus of the plantations companies, amounting to approximately $9,000,000 as of December 31, 1926, is available to provide for any additional adjustment that may be found necessary for the year. The net profits of the plantations companies for the six months ended June 30, 1927, amounted to approximately $2,000,000.

"No part of the surplus of $9,000,000, or of the additional profits of $2,000,000 for the first six months of 1927, referred to above, has been included in the income or surplus of the United States Rubber Co.

"Current assets as of June 30, 1927, amounted to $149,869,838, and current liabilities amounted to $38,176,450. Current assets consisted of $8,146,433 in cash, $46,007,454 in accounts receivable, less reserve for doubtful accounts, and $95,715,951 in inventories of finished goods and raw materials. Current liabilities consisted of $17,550,000 in bank loans and $20,626,450 in accounts payable, including acceptances payable for importations of crude rubber."

NEW CORPORATION BUYS KEATON TIRE FACTORY

The Keaton Tire & Rubber Co., of San Francisco, has been acquired by a new corporation known as the Rubber Corporation of America which was recently granted a permit in San Francisco to issue $125,000 worth of preferred stock. The Rubber Corporation was originally incorporated in May of this year with a capitalization of $250,000, but it has only recently taken over the plant of the Keaton Tire & Rubber Co.

A. L. Clark, who is vice-president and general manager of the American Brake & Foundry Co., is also president of the Rubber Corporation. He is quoted as saying that the new corporation will continue to manufacture and distribute Keaton non-skid tires as the initial program, and will then manufacture a line of rubber specialties. "The Keaton plant has been conditioned and tuned up for full production," Mr. Clark said. "As a preliminary feature we have engaged in research and experimental work for weeks and have developed a superior non-skid Keaton tire. By intensive advertising and salesmanship we plan to make this production popular among motorists on the Pacific Coast."

CABOT SUPERINTENDENT NOW LOCATED IN PAMPA

W. A. DUERR

Headquarters of W. A. Duerr, general superintendent of the Godfrey L. Cabot, Inc., carbon black plants in Texas, have been moved from Breckenridge, Texas, to Pampa, in the same state, where the Cabot company have under construction what promises to be one of the largest carbon black plants in the world.

Mr. Duerr is only twenty-nine years old, but has risen rapidly in the Cabot ranks. By training he is a chemical engineer, having graduated from Harvard in 1921 with the highest honors given for several years. The innovations introduced in the Cabot factory near Pampa are largely the fruit of Mr. Duerr's work.

Eclat Interest Sold

W. H. Stillwell, former president of the Eclat Rubber Co., of Cuyahoga Falls, O., and owner of the controlling interest of the company has sold his interest to E. H. Trump, founder of the Trump Rubber Co., according to E. H. Reiss, secretary of the Eclat company. Management of the latter company has been entirely changed, with E. H. Trump becoming president, Ross Trump, secretary, and W. A. Heffelman, vice-president. The Eclat company manufactures rubber novelties and hose.

Toy balloons printed with the likeness of Col. Charles A. Lindbergh together with a picture of his plane have been produced by the Oak Rubber Co., of Ravenna, O.

HEAVY DROP IN JULY RUBBER CONSUMPTION

Unexpectedly Low July Consumption of 29,219 Tons Is Revealed by the Rubber Association—Stocks Are Lower But July Imports Increase.

An unexpectedly low crude rubber consumption figure for the month of July was reported by the Rubber Association of America on August 15. The Association's statement revealed that July consumption totaled only 29,219 tons, based on 100%, which is a decline of 4,582 tons from the June total which was 33,801 tons. Consumption in May, 1927, was 34,592 tons, while 27,577 tons was consumed in the corresponding month a year ago.

A similar decline occurred in stocks afloat at end of July, which totaled only 40,587 tons on a 100% basis, compared to 47,233 tons at the end of June and 44,181 tons at the end of May. Stocks on hand, however, increased appreciably, totaling 98,469 tons, or 9,219 tons in excess of June stocks. This increase brings the total of stocks on hand and afloat to the record total of 139,056 tons, the greatest tonnage recorded in any one month during the past three years.

Imports of crude rubber during July increased, which is in keeping with what has occurred in this month throughout the past two years. Both in 1925 and 1926 July imports increased over June figures. According to the Rubber Association, imports totaled 38,667 long tons in July which compares with 37,087 long tons imported in the corresponding month of last year and 33,194 long tons imported in June of the current year. The preliminary estimate of the Department of Commerce in regard to imports during July stands at 36,636 tons. For the seven months ending July 31, total imports amounted to 265,517 tons which compares with 245,724 tons in the first seven months of 1926.

Comparative figures relative to the rubber imports follow:

	July, 1926	July, 1927
Plantations	35,537	37,060
Paras	800	871
Africans	36	46
Centrals	419	388
Guayule	295	295
Manicoba and Matto Grosso	—	7
TOTAL	37,087	38,667

Fisk Flap Head Ill

C. Francis Fisk, president of the Fisk Flap Rubber Tube Co., Yardville, N. J., is still confined to his home through illness. He was stricken about two months ago and has been at home ever since.

CATALPO!

GOODYEAR-U. S. RUBBER MERGER PLAN IS DENIED

A report that the Goodyear Tire and Rubber Company and the United States Rubber Company would probably be merged into one company was started by the New York *Journal of Commerce* on August 11 and gained wide circulation in the rubber industry. Officials of the companies denied the report as soon as it was mentioned to them and were emphatic in their statements that no such move was contemplated.

According to the story of the New York financial paper, F. A Seibering and Edgar B. Davis were undertaking the preliminary work looking to the merger. The authenticity of the report was based to some extent on the presumption that Mr. Seiberling had returned to the Goodyear board of directors at the recent election. As is well known, Mr. Seiberling does not hold a place on the Goodyear board, his name having been confused with that of a nephew, Francis Seiberling, an Akron attorney.

Rumors of a consolidation of Goodyear and United States Rubber sprang up several weeks ago when Edgar B. Davis, formerly a United States Rubber Company official, was said to have bought considerable stock in the Goodyear company. Like the latest rumors, these were denied and nothing more was heard of them. Officials of the two companies state that there is no doubt that certain interests would be glad to see the companies joined but they see little likelihood of that transpiring although attempts may be made to bring it about.

GENERAL TIRE STARTS TIME PAYMENT SCHEME

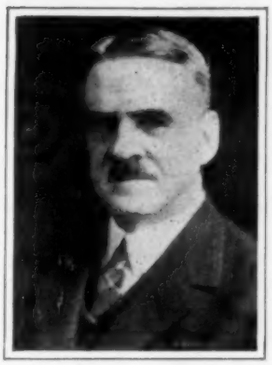
The General Tire & Rubber Co., of Akron, has inaugurated a time payment plan for the purchase of its tires. The company has organized a subsidiary organization known as the General Tire Acceptance Corporation, through which tires manufactured by the General Tire & Rubber Co. may be bought.

The acceptance corporation, it is reported, was formed primarily to suit the needs of owners of moderate priced cars, but will include the whole line of General tires. The plan is expected to give motorists, who have formerly bought low priced tires which do not ordinarily give very long wear, the opportunity of riding on General tires.

N. J. Zinc Net is Higher

The New Jersey Zinc Co. reports a net profit of $1,975,514 for the quarter ended June 30, 1927, after taxes, depreciation, depletion, etc., equivalent to $4.02 a share earned on 490,816 shares of stock. This compares with $1,769,480 or $3.60 a share in the preceding quarter and $1,607,538 or $3.27 a share in the second quarter of 1926. Net profit for the first six months of 1927 totaled $3,744,994 after above charges.

Will Manage British Plant



Charles P. Skinner

Chemical Exposition

The managers of the Eleventh Exposition of Chemical Industries, which will be held at the Grand Central Palace, New York, September 26 to October 1, have announced that there will be from 350 to 400 exhibits, many of which will be shown and discussed for the first time. The coming exposition will be three times greater than the one in 1921.

LITCHFIELD NAMES HEADS FOR NEW BRITISH PLANT

P. W. Litchfield, president of the Goodyear Tire & Rubber Co., Akron, has announced the personnel of the new branch factory to be operated in Wolverhampton, England, in the near future. Charles P. Skinner, managing director of Goodyear sales in England, was named managing director of the new factory. Other officials appointed are: Tom A. Linnane, Akron, general superintendent; George E. Price, Jr., Akron, purchasing department; Robert T. Brown, Canadian plant, development; Paul A. Sullivan, California plant, administration; E. Sheahan, California, Division A; W. D. Ladue, Akron, engineering, and F. G. Wortman, Akron, personnel.

Mr. Skinner joined the Goodyear organization in 1922 and spent two years in South Africa as managing director of Goodyear's sales branch. He is a native of Boston. The other officials who will go to Great Britain have had long experience at the Akron and Los Angeles factories and production is accordingly expected to start smoothly and promptly at Wolverhampton. Shipments to some British colonies will be made from the new plant.

AJAX RUBBER REPORTS A LOSS OF $861,158

Company's Activities To Be Concentrated at Racine—New York Offices Will Be Moved October 1—President Forecasts Better Outlook.

The Ajax Rubber Co., Inc., New York and Racine, reports for the six months ended June 30, 1927, a net loss of $861,158, after inventory adjustments, interest, depreciation, etc. This compares with a net profit in the first half of 1926 of $74,279, after interest, depreciation, inventory reserve and Federal taxes, equal to 15 cents a share on 500,000 shares of no par stock then outstanding.

In his semi-annual report to stockholders, J. C. Weston, president of the company says:

"Sales for the first six months in tire units, to the dealer class of trade, exceeded those for the same period of 1926 by a substantial margin, and unit sales to manufacturers were approximately the same. The company plans to concentrate its activities at one point, i.e., Racine, Wis. Manufacturing is now discontinued elsewhere and confined to that point. The general offices of the company, which have always been maintained in New York City, will, about October 1, be moved to the Racine plant, and the plant, when present improvements are completed, will have practically the same productive facilities as were heretofore contained in the two plants, this being accomplished by balancing departments, and at a minimum expenditure. The manufacturing, thereby, will be operated with one overhead instead of two.

"In order that the company may not be handicapped in its determination to begin to show at the earliest possible moment the advantages in profits through the lower costs and economies to be experienced by this policy concentration, introduction of labor saving devices, etc., it has been deemed wise to reduce its inventory values as of June 30 to cost or market, whichever is lowest, as well as to provide for every possible loss, including items which might legitimately be spread over the last six months of the year's operations. Expenses to date incident to this transition period are included in losses exhibited. The company's financial condition continues sound. Its ratio of quick assets to liabilities being 4.22 to 1."

Consolidated income account for six months ended June 30, 1927, of the Ajax Rubber Co., compares as follows:

	1927	1926	1925	1924
Sales	.....	.....	$9,696,213	$7,311,105
Oper. exp., etc.	.....	.....	9,146,088	6,736,117
Gross loss	$537,457	*$587,535	*$550,125	*$574,988
Other inc.	97,890	78,108	101,384	59,736
Total loss	$439,567	†$665,643	†$651,509	†$634,724
Int., depr., etc.	421,591	329,771	330,024	311,602
Fed. tax	.....	11,593	59,091	.....
Reval. & reb.	.....	.....	.....	179,605
Invent. res.	.....	250,000	.....	.....
Net loss	§861,158	$74,279	‡$262,394	‡$143,517

§This comprises taking of inventories at actual cost or market (whichever is the lower), and includes expense to date incident to abandonment of operations at the eastern plant, and concentration thereof at Racine, Wis.
*Profit. †Income. ‡Net profit.

HEAVY TIRE AND TUBE OUTPUT IN 6 MONTHS

Rubber Association Report on Tire and Tube Production in First Six Months of 1927 Substantiates the Reports of Heavy Production.

Statistical reports of the Rubber Association giving complete tire and tube figures for the first six months of the current year bear out the frequent stories as to greatly increased production in tire plants throughout the country. During the first half of 1927, the Association shows, tire production was 14% heavier than in the corresponding period of 1926. Inner tube production, however, showed a loss of more than 2% on the same basis of comparison. Detailed figures are as follows:

	1st 6 mos. 1927	1st 6 mos. 1926	12 mos. 1926
Tires	35,002,000	30,699,000	61,472,000
Tubes	38,597,000	39,538,000	76,618,000

In spite of the much higher rate of tire production, manufacturers' stocks on hand were a little higher on June 30 than was the case a year ago. The increase in stocks actually amounted to about 500,000 tires. The inventory of inner tubes was less than it was a year ago, due to decreased production and well-sustained sales. The Rubber Association's figures on both tires and tubes for the past three years are shown in a table in the statistical section of this issue of THE RUBBER AGE.

June tire production showed some increase over May, but this was taken care of by increased shipments so that inventories remained almost stationary. June tube production was considerably lower than either May or April and since sales increased about 700,000 tubes, a gratifying decrease in tube stocks was made. On June 30 the stocks of tubes held by manufacturers stood at 17,589,000 as compared with 20,243,000 on the same date in 1926.

Detailed June figures, raised to a 100% basis and expressed in thousands, are as follows:

	Inventory	Production	Shipments
Casings:			
Balloon	5,956,197	3,659,150	3,165,793
High Pressure..	5,876,072	2,512,198	2,937,240
Total	11,832,269	6,171,348	6,103,033
Tubes:			
Balloon	8,341,708	3,725,552	3,104,202
High Pressure..	9,516,821	2,580,888	3,728,125
Total	17,858,529	6,306,440	6,832,327
Solid and Cushion Tires...	243,780	81,553	73,784

Goodrich Picnic

The employees of the tire production department of the B. F. Goodrich Co., Akron, recently held their annual picnic at Rex Lake, near Akron.

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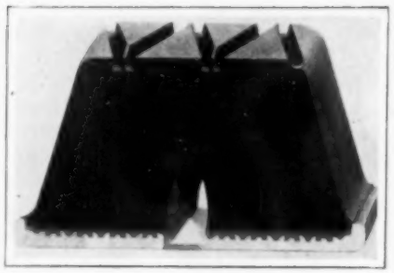

GOODYEAR ANNOUNCES A NEW SUPER TRUCK TIRE

Announcement of a new super-pneumatic cushion truck tire, with a tread 6 inches high in some sizes, to meet the demand for a tire to carry heavier loads, with better cushioning, has just been made by the Goodyear Tire & Rubber Co., of Akron. The new tire is especially recommended for use on trucks carrying oil, packer's supplies, baking and food companies, telephone companies, and others of similar character and transportation needs. It will not replace the company's present cushion tire.

It is claimed that the new tire, a section of which is herewith illustrated, will give better cushioning, traction and mileage, than any other tire of its type previously built. More rubber is used in its construction, and this is given as the reason for the longer tread wear. The 8-inch size is 1½ inches higher than any tire Goodyear has previously built, while the 9, 10 and 12 inch are altogether new.

Good Rubber Co. Contract

The Good Rubber Co., of Akron, recently entered into a contract with the Kirk Co., manufacturers of soap, for the sale of the entire output of inflatable rubber dolls being manufactured by the Good Rubber Co. The latter company, which has been making toy balloons, has lately acquired manufacturing rights to the rubber doll. The Kirk Co., it was said, intends to use the rubber dolls for sales promotion purposes.

Gets State Tire Contract

The New Jersey State House Commission has awarded a contract to Fineburg's Auto Tire & Accessory Co., of Trenton, to furnish the State of New Jersey with solid tires. The contract price was $7,743. Action was deferred by the commission on bids ranging from $47,000 to $57,000 for furnishing pneumatic tires for the fleet of State-owned trucks.

Working on Goodrich Site

Work has begun on the 45-acre tract adjoining Montebello Park in Los Angeles, where the new western plant of the B. F. Goodrich Co., of Akron, will be built. It is reported that 100 teams are at present engaged in grading the land in preparation for the construction of factory buildings.

EASTHAMPTON ELASTIC INDUSTRIES TO MERGE

Directors of Three Firms Have Given Approval to $6,500,000 Merger—Is To Be Known as The United Elastic Fabric Corporation.

Directors of three well-known elastic fabric firms in Easthampton, Mass., have approved a plan for the exchange of the stock of their respective companies for stock in a new consolidated corporation to be known as the United Elastic Fabric Corporation. The proposed corporation will have a capital stock of 165,000 shares of no par value, with a market value of approximately $6,500,000.

Easthampton industries which will be merged into one organization include the present firms of Glendale Elastic Fabrics Co., George S. Colton Elastic Web Co., and Conant, Houghton & Co., the latter firm being located in Lowell, Mass., with a subsidiary organization in Littleton, Mass. A fourth company, the Easthampton Rubber Thread Co., will be affiliated with the United Elastic Fabric Corp., but will be operated as a separate firm. The rubber thread company will continue to manufacture rubber thread for the united corporation.

The plan for the merger is being accomplished without public financing. The provisional consolidated statement of the several companies indicates that the united organization will begin business with a surplus of one million dollars. The management of the United Elastic Fabric Corp. will remain in the hands of the present executives of the consolidating companies. It is expected that the consolidation will considerably increase the total earnings of the several companies through a reduction of sales expense, plant overhead, lessening of inventories and better utilization of equipment.

The basis of the plan for the exchange of the securities of the respective companies is the result of a consideration of the quick assets, the fixed assets, the earnings, sales values, and the present market value of the securities of each firm.

Murray Rubber Busy

The Murray Rubber Co., Trenton, N. J., is operating overtime in all its departments. Tire production has increased over last month and the prospects for fall and winter are very good. Shipments of hose, belting and packing continue above normal.

CATALPO!

Financial Items

Rubber and Motors

DECLINE IN PROFITS OF INTERCONTINENTAL

Net profits of the Intercontinental Rubber Co., of New York City, and subsidiaries, for six months ended June 30, 1927, and after depreciation, Federal taxes, etc., totaled $366,054, representing a falling off from net profits totaling $612,067 in the first six months of 1926. The company's profits in the six months of the current year are equivalent to 61 cents a share earned on 596,004 shares of no par stock compared to $1.03 a share on the profits in the first six months of 1926.

Intercontinental's consolidated income account for six months ended June 30, 1927, compares as follows:

	1927	1926
Profit	$576,507	$905,307
Expenses, ordinary taxes	85,982	127,340
Depreciation, amortization	65,500	73,000
Federal taxes	58,970	92,900
Net profit	$366,054	$612,067
Dividends	297,279	592,207
Surplus	$68,775	$19,860

Intercontinental's consolidated balance sheet as of June 30, 1927, compares as follows:

Assets	1927	1926
*Land, bldgs., eq. etc.	$4,192,768	$4,019,611
Cash	121,448	415,836
Call loans	2,475,000	2,100,000
Mark secur.	.....	18,007
Accts. rec., etc.	249,796	256,469
Inventories	437,149	453,333
Adv. and claims	105,859	120,630
Def. charges	99,717	78,607
Treas. stock	1,720	1,720
Total	$7,683,457	$7,464,213
Liabilities		
†Capital stock	$5,960,040	$5,960,040
Accts. and drafts pay.	181,653	136,965
Fed. taxes res.	101,945	137,797
Def. cred. to inco.	1,425	9,000
Sundry res.	73,101	74,149
Other res.	299,727	299,727
Surplus	1,065,566	846,535
Total	$7,683,457	$7,464,213

*After depreciation and amortization and includes patents, trademarks, etc.
†Represented by 596,004 shares of no par stock.

Goodrich Common Advances

Common stock of the B. F. Goodrich Company touched a new high for the year on August 16 when it sold on the New York Stock Exchange at 67. Less than a month ago, coincident with the company's financial statement for the first half of 1927, the common stock reached the year's previous high at 66. Goodrich preferred also reached a new high on August 18 when it changed hands at 103¼.

The common stock of the Firestone Tire & Rubber Co., Akron, has been fluctuating around 140 in the past fortnight, but on August 17 it was trading on the Exchange at 146½, which is a new high for the year. Slight advances have also been made by Lee common and Kelly-Springfield preferred.

Late Stock Prices

	Last Price Aug. 17	Aug. 2	1927 High	1927 Low
Ajax	8⅛	8¾	12⅛	9
Firestone	146¼	141	146½	117
do 6% pfd.	106	105¼	107	107⅞
do 7% pfd.	103	101¼	103½	98½
Fisk	16¼	17¼	18¼	16
do 1st pfd.	83	84	89	81
General	—	140	155	140
do. pfd.	102½	102½	106	99¾
Goodrich	66¼	66	67	42¾
do pfd.	103¼	102½	103½	95
Goodyear Com.	53	55	55¼	29½
do pr. pfd.	—	110	118⅛	104½
do pfd.	115	116¼	117	98½
Hood	—	—	47	42¼
India	22	24	30	28
Intercontinental	12½	—	15¾	11½
Kelly Springfield	23¼	22⅞	24¾	9½
do 1st pfd.	69	65	70	44
do 8% pfd.	70	67	70½	35
Lee	10¼	11⅜	11¾	7
Miller	28¾	31½	36⅞	32
do. pfd.	98½	99	104	100
Mohawk	—	—	25	15
do. pfd.	38	38	65	65
Seiberling	32	32⅛	34⅞	21⅜
do pfd.	101	101	101	96
Star	—	—	2	2
U. S. Rubber	50	49¼	67⅛	38
do pfd.	96¾	94½	111¼	87
U. S. Rubber Reclaiming	12	—	12	12
do p. pfd.	24	—	24	24
do series A	15	—	15	15

TRADING IS MODERATE ON RUBBER EXCHANGE

Moderate trading with a general upward movement of prices has characterized activity on the Rubber Exchange in the past fortnight. The advance, however, has been very gradual, suffering one set-back on August 8 when the market sagged on advice from London that stocks in that center had increased slightly. Thereafter trading on the Exchange began to pick up and October rubber sold for 36c on August 12. A general statistical indication of a shrinkage in world rubber stocks has had a tendency to scare off "bear" operations, as have many rumors regarding possible restriction changes.

More recently the market has firmed, advancing to over 37c in April-June positions.

On August 18 trading was rather feverish and irregular. The volume of business was only moderate, with total sales amounting to 350 lots. The usual table showing trading in all positions on the Rubber Exchange is included on this page. The report on the number of sales made each day shows a well-sustained interest in the futures.

AETNA RUBBER EARNS PROFIT OF $115,000

The report of the Aetna Rubber Co., of Cleveland and Ashtabula, O., for the six months ended June 30, 1927, reveals net profits totalling $115,000, which is equal after preferred dividends to better than $1.50 a share on 70,000 shares of common stock. This compares with net profits of $90,000 in the first half of 1926. Earnings for May, June and July, which are said to be usually dull months for the Aetna company, were at very much better level than in previous years. This is attributed to the contracts which the company has acquired for electric refrigeration parts, a department only recently developed at the Aetna plant.

According to S. T. Campbell, president, there has also been a strong demand for the company's dipped rubber gloves, which will require additional plant capacity to take care of the increase. This expansion, plans for which are still in formation, will enable the company to expedite shipments and to operate more economically. It was said that while the expense of erecting a new building would preclude any extra dividends at the end of this year, an increase in the regular rate of $1 a share may be forthcoming if earnings continue to increase as they have in the past month. The company is operating on three shifts, twenty-four hours a day, and six days a week.

Closing Prices on Rubber Exchange of New York, Inc.

AUGUST 3 TO AUGUST 18

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	SALES*
Aug. 3	34.70	34.90	35.00	35.10	35.30	35.40	35.60	35.70	35.80	35.90	36.00	36.10	172
4	35.10	35.20	35.30	35.50	35.60	35.70	35.90	36.00	36.10	36.20	36.30	36.40	407
5	35.50	35.50	35.50	35.60	35.90	36.00	36.20	36.40	36.60	36.70	36.80	36.90	568
6	35.20	35.20	35.30	35.50	35.70	35.80	36.00	36.30	36.40	36.60	36.70	36.80	176
8	35.20	35.30	35.40	35.60	35.70	35.80	36.00	36.20	36.30	36.40	36.50	36.60	182
9	35.50	35.60	35.80	35.90	36.10	36.20	36.40	36.60	36.70	36.90	37.00	37.10	456
10	35.50	35.70	35.90	36.10	36.40	36.40	36.60	36.80	36.90	37.00	37.10	37.20	404
11	35.60	35.60	35.80	35.90	36.00	36.10	36.20	36.40	36.40	36.50	36.60	36.70	831
12	35.80	35.90	36.00	36.20	36.50	36.50	36.70	36.80	36.90	37.10	37.20	37.40	568
13	35.80	36.00	36.10	36.40	36.60	36.70	36.90	37.10	37.30	37.40	37.60	37.70	120
15	35.20	35.30	35.30	35.70	35.80	35.80	36.00	36.10	36.40	36.60	36.70	36.90	470
16	35.20	35.30	35.30	35.50	35.80	35.80	36.00	36.10	36.30	36.50	36.70	36.90	354
17	35.40	35.40	35.70	36.00	36.30	36.30	36.50	36.70	36.70	36.80	37.00	37.20	377
18	35.30	35.40	35.40	35.70	35.90	36.00	36.30	36.60	36.80	37.00	37.10	37.20	350

(*) In lots of 2½ tons each.

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Manufacturer of

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RECEIVERSHIP FEES OF GLOBE RUBBER AWARDED

Affairs of the United & Globe Rubber Co., Trenton, N. J., were closed on August 15 when Federal Judge Runyon approved the report of the receivers and awarded fees amounting to $38,950. According to the report, receipts of the concern since it went into receivership approximately three and a half years ago, were $193,340, and disbursements, $1,820.

The sum of $162,569 remained to satisfy the claims of creditors amounting to $720,294. It is expected that this will be paid out within the next few weeks after which the court will approve the final accounting.

Included in the fees awarded are $17,000 to Bilder & Bilder, a Newark law firm, which acted as attorneys for the receivers, and $10,000 each to the two receivers, J. Philip Bird, of Plainfield, and Colonel Edward C. Rose, Trenton.

Perrott Given New Post

George St. J. Perrott, who has been a member of the staff of the U. S. Bureau of Mines for the last ten years, has been appointed superintendent of the Pittsburgh Experiment Station of the Bureau. He is best known to the rubber industry through an elaborate study of the carbon black industry which he made following the end of the war. The results of the study were published in the Bureau's bulletin No. 192 which is regarded as one of the most elaborate treatises ever prepared on the subject. Among other investigations which Mr. Perrott will direct in his new position will be those dealing with the technology of gases and fuels.

Paper on Rubber Abrasion

A special committee, appointed to plan for the participation of the American Society for Testing Materials at the International Congress for Testing Materials to be held in Amsterdam, Holland, September 12 to 17, has solicited eighteen papers which have been written by members of the Society to be read at the International Congress. Among the papers to be read is one by F. G. Breyer, consulting engineer, of the firm of Singmaster & Breyer, and H. A. Depew, of the research division of the New Jersey Zinc Co. The paper is entitled: "The Abrasion Test as a Criterion of the Toughness of Rubber Compounds."

Pennsylvania in the West

It is reported from Portland, Ore., that the Pennsylvania Rubber Co., of Jeannette, Pa., has leased an office and storage space in that city. The space leased by the rubber company totals 7,500 square feet. Catlin Wolfa, of Portland, has been appointed western sales manager for the Pennsylvania company, and John S. Bathrick, northeastern sales manager.

NEW AGE-RESISTER IS INTRODUCED BY HALL

C. P. Hall Co., of Akron, have announced the introduction of a new age-resister which they have named "Stabilite," and which they claim stabilizes and evens out not only the working of any compound from the first mixing to the final cure, but also stabilizes the cure itself, making it possible to cure different sized tires in the same heat without the danger of overcure. According to the C. P. Hall Co., "Stabilite," moveover, stabilizes the life and wear of the products in which it is used by resisting age, heat and sunlight checking.

It is claimed that this new age-resister is particularly adaptable to truck and bus tube compounds by reason of its heat-resisting properties, and that its use in compounds increases tensile strength and elongation, producing a better aged and longer-lifed product. The company offers samples of "Stabilite" and graphs showing its performance in all kind of tests in factory-used compounds. The C. P. Hall Co. is well known as the manufacturer of "Para-Flux," a rubber softener.

Appoint General Tire Man

The general advisory committee of the Ohio state industrial commission has oppointed Charles J. Jahant, of Akron, vice-president and superintendent of the General Tire & Rubber Co., a member of the committee. Twenty men, representing the leading industries and trades of Ohio, have been named on the committee, which will assist in drafting rules in accordance with the state workmen's compensation act for the protection of industrial workers.

Writes on Factory Safety

P. H. Ober, president of the Mansfield Tire & Rubber Co., of Mansfield, O., has written an article on "The Problem of Safety" in the August 17 issue of the *Central Ohio Manufacturer,* a publication issued in the interests of the Manufacturers' Association of Central Ohio. Mr. Ober views the problem of safety from the standpoint of the factory and says that the manufacturers' problem is to have the greatest production with the minimum of accidents. Housekeeping in the factory, Mr. Ober points out, is extremely essential and includes not only the cleaning up of walls and floors, but the disposal of oily rags and other debris which may cause fire. Every accident prevented is a benefit to the corporation as well as to the victim, he says.

New Premier Warehouse

It has been announced that the Premier Rubber Co., of Dayton, O., is planning the erection of a $5,000 warehouse in that city. The building will be one story in height and of concrete.

NORWALK TIRE EARNS $33,323 IN 6 MONTHS

A net profit of $33,323 after expenses, interest and depreciation was reported by the Norwalk Tire & Rubber Co., of Norwalk, Conn., for the quarter ended June 30, 1927. This profit is equivalent after 7% preferred dividend requirements to 8 cents a share (par $10) earned on 150,000 shares of common stock. In the preceding quarter Norwalk suffered a loss of $46,953 after above deductions. The result for the first half of the current year is accordingly a net loss of $13,630.

Income account for quarter ended June 30, together with the previous quarter and for the six months ended June 30, follows:

	Quart. end. June 30, '27	Quart. end. Mar. 31, '27	6 Mos. end. June 30, '27
Gross profit	$195,171	$118,408	$313,579
Expenses	132,914	139,637	272,551
Operat. profit	$62,257	*$21,229	$41,028
Other income	5,821	4,940	10,761
Total income	$68,078	*$16,289	$51,789
Depreciation, etc.	34,755	30,664	65,419
Net income	$33,323	*$46,953	*$13,630

*Net loss.

Company Will Build Road

A report that the Pennsylvania Rubber Co., of Jeannette, Pa., was planning the construction of a road through its property making a traffic link leading to and from the Lincoln Highway, was recently confirmed by D. M. Mason, general manager.

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CHARLES H. SEMPLE, OF SEMPLE-LEE CO., DEAD

Charles H. Semple, former head of the Semple Rubber Co., of this city and a pioneer in the rubber industry, died on August 1 at the Monmouth Memorial Hospital, Long Branch, N. J. Death was due to paralysis from which he had suffered but a short time. He was in the 57th year of his age.

Mr. Semple was formerly president of the old Empire Tire Co., Trenton, having been affiliated with that concern from 1907 to 1915. At the time of his death he was head of the Semple-Lee Process Co., patentees of a new method of manufacturing inner tubes. He had secured patents on the process only a short time before his death. Trenton was one of the eastern cities in which Mr. Semple was introducing his new method.

Mr. Semple was a native of Indianapolis, Ind., where he was secretary of the G. & J. Tire Co. Following the merger of the Empire Tire and the Empire Rubber companies, Mr. Semple founded the Semple Rubber Co. in Trenton. While in business for himself he developed his new process of making inner tubes. The process was being introduced to the larger tire manufacturers throughout the United States at the time of Mr. Semple's death. His principal field of business was in the west and he made his headquarters at Canton, O. Mr. Semple was devoted to home life and his family, and his wife nearly always accompanied her husband upon his business trips.

Mr. Semple is survived by his widow, Mary Barrett Semple, two brothers, Miller Semple, of Philadelphia, and Edward Semple, of Chicago. He was a member of the Carteret Club, Trenton Club and the Trenton Country Club. Burial was made in the Ewing Church Cemetery near Trenton.

SAFETY ENGINEERS TO HOLD ANNUAL MEETING

The Rubber Section of the National Safety Council will participate in the 16th annual safety congress, which that organization will hold at the Stevens Hotel, Chicago, September 26-30, inclusive.

There will be a breakfast meeting for officers, committeemen and speakers of the Rubber Section in the Stevens Hotel, Chicago, on Tuesday morning, September 27. At the general meeting on that morning, addresses will be made by Chairman W. L. Schneider, H. W. Low, of the Miller Rubber Co., on "Knives and Shears." Paul Van Cleef, of Van Cleef Bros., on "The Important Part Safety Holds in the Rubber Industry," and a motion picture of rubber plantations will be shown.

On Wednesday morning, J. E. Congdon, of the U. S. Rubber Co., will present the report of the engineering committee; S. Mansfield, of the Goodyear Tire & Rubber Co., will report for the statistics committee and there will be addresses by L. J. Healey, of the Fisk Rubber Co., and J. Newton Shirley, of the Hood Rubber Co., on "Health Hazards of Compounding Materials." E. R. Lawler, of the U. S. Rubber Co., will speak on "Safety Kinks in the Rubber Industry."

CHICAGO TIRE WORKERS STRIKE FOR HIGHER PAY

The first labor dispute in the Chicago district between tire repairmen and their employers has been settled satisfactorily, reports *Tires and Accessories*. The workmen's organization, which is known as the Tire Workers, Repairers and Vulcanizers' Union, was organized four years ago, but made its first demand on the tire dealers of Chicago and vicinity only recently. This was for an eight-hour working day and an increase of $2.50 per week in wages.

The Chicago Tire Dealers' Association conceded the wage increase, but not the reduction from the nine-hour day and the repairmen agreed to the compromise. Another organization of dealers, however, known as the Tire Club of Chicago, refused to agree on either demand at first and a nine-day strike ensued. In the end, the Tire Club made the same concession as the Tire Dealers' Association had made in the beginning and the men returned to work.

WELSH & JOHNSON, INC., IS NEW AKRON AGENCY

James H. Johnson and Edward J. Welsh have formed a general advertising agency at Akron, O., under the name, Welsh & Johnson, Inc.

Both men have had extensive experience in advertising work. Mr. Welsh, who is president of the new firm, was for many years with the Goodyear Tire & Rubber Co. in its advertising department and for the past four years has conducted his own agency in Akron under the name, Portage Advertising Agency.

Mr. Johnson, vice-president and secretary of the new agency, has been engaged for eight years in newspaper, street car, direct by mail, and outdoor advertising. He has been connected with the Cleveland *Plain Dealer*, American Lithograph Co. and Barron G. Collier Co.

The offices of the agency are at present in the Ohio Bulding in Akron.

New England Mills Profit

The New England Southern Mills Co. earned a net profit of $654, after taxes, interest and other charges in the three months ended June 30, as compared with a net loss of $177,723 in the second quarter of 1926. The company suffered a loss in the first half of 1927 of $11,467, against a loss of $340,556 in the first half of 1926.

CLASSIFIED ADVERTISING

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HELP WANTED

EXPERIENCED CHEMIST WANTED to take charge of laboratory and compounding on high grade soles and heels. Prefer man with engineering aptitude. Good opportunity for the right man. In applying please furnish reference, stating age, whether married or single, also the training and experience you have had. Address Box 462, THE RUBBER AGE.

DEVELOPMENT ENGINEER
Wanted by large rubber manufacturer in Akron, Ohio. Applicant must have at least five years' experience in the development of mechanical goods. In reply state age, experience and salary desired. Address Box 463, THE RUBBER AGE.

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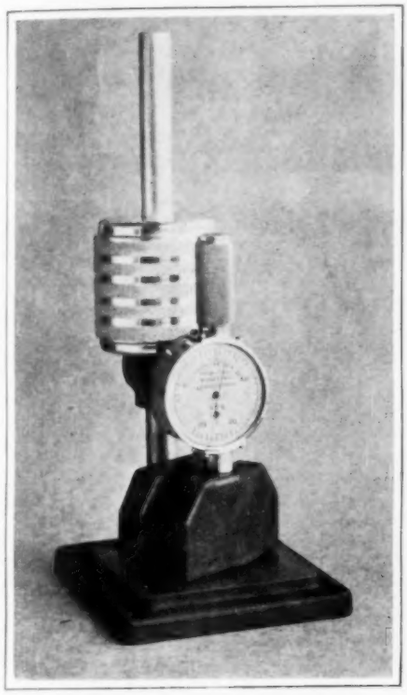
New Equipment for Rubber Factories

RUBBER SHOCK INSULATOR TESTING INSTRUMENT



Penetrometer for Insulators

A SPECIAL penetrometer for testing the hardness of rubber shock insulators has been developed by the International Motor Co., Long Island City, N. Y., by making certain changes in the standard Firestone penetrometer. The chief change in the Firestone instrument has been the removal of the movable platform with spring actuation and the substitution of a weight. The two Firestone parts retained are the base with a vertical shaft and the arm for the penetrometer.

The penetrometer measures the resistance to penetration of the rubber, commonly called hardness, by providing a means of applying a definite load upon a point of definite shape and depth against the surface of the rubber and accurately recording the effect on a calibrated scale.

In using the instrument the weight-carrying arm and penetrometer is raised high enough to allow a flat surface of the shock insulator to be placed on the base and the weight is lowered to allow the penetrometer point to rest on a flat portion of the rubber block. The reading is then taken. It must be noted that the dial of the instrument is marked counter-clockwise. To insure a proper test, the bottom face of the penetrometer through which the point protrudes, must rest entirely on the surface of the rubber. Several tests should be made on each block, some near the edge and some near the center. Soft rubber gives a high reading on the scale and hard rubber a low reading.

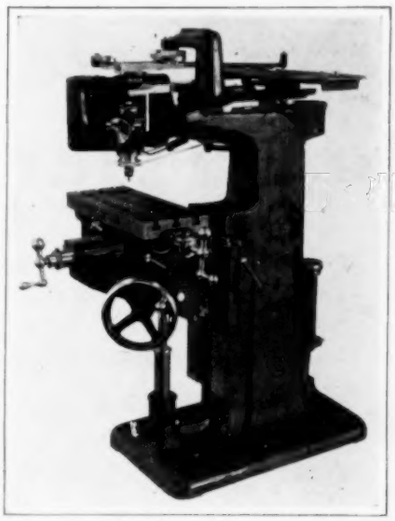
A shock insulator of Firestone manufacture, according to the chief engineer of the International Motor Co., should give a reading of 47. Permissible variation is four points in either direction. Shock insulators of other makes should fall within the same limits. Where recent test results have failed to come within these figures, the stock has usually run a little too hard rather than too soft. If they test only two or three points under 43, the samples are probably all right; those testing too soft, however, are held to be undesirable.

UNIVERSAL DIE-SINKING & ENGRAVING MACHINE

The George Gorton Machine Co., of Racine, Wis., have introduced a universal die-sinking and engraving machine (see illustration) which they state is suited to either light or heavy engraving and die-sinking on flat or spherical surfaces. It is said to be a precision tool, suitable for engraving mechanical rubber goods dies.

The machine is especially adapted to heavy cutting on steel dies, stamps, and similar jobs in brass and cast iron. The machine can also do light and sensitive work, such as delicate lettering, according to the manufacturers. Pantograph bars graduated with reductions 3, 4, 6, 7, 8, 10, 12, 14, and 16 are standard, but reductions 3 to 1 down to 0 to 0 are also obtainable. All the pantograph joints are equipped with special ball bearings.

The cutter head and link is of heavy and rigid construction, and is also mounted on ball bearings so that it can be moved about by means of the tracing arm without much effort. The spindle is also mounted on ball bearings and has speeds of 2,300 to 9,000 r.p.m. The table in 8 inches wide by 19 inches long, and has three T-slots. Both the table and saddle-feed screws have micrometer collars, graduated in thousandths of an inch. Taper gibs are used to eliminate play between the sliding surfaces. The table, or longitudinal feed, is 12 inches, and the saddle, or cross feed, 8¾ inches.



Gorton Engraving Machine

The machine will regularly handle a disk 5 inches thick and 36 inches in diameter, or smaller, or a drum 13 inches high and 26 inches in diameter, or smaller. The knee is a box casing which is raised and lowered by a handwheel at the front provided with a graduated collar reading in thousandths of an inch. The knee is carried by a telescoping screw against a ball bearing. Drive is by endless linen belts from a motor mounted on the left side of the machine. It is rated at ½ hp. at 1,700 r.p.m. and carries a 2-step cone pulley. The whole machine occupies a floor space of 54x44 inches and measures 54 inches high. Its approximate weight is 1,020 pounds net.

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THE GENTLEMAN FROM MINCING LANE
reports current opinion in London's famous rubber market in every issue of THE RUBBER AGE

The London Letter

This Week the Gentleman Finds Many Topics of Interest

London, 10th August, 1927.

ALTHOUGH the price of crude rubber has gained only fractionally during the past fortnight, the prevailing atmosphere in Mincing Lane has brightened up considerably, the receipt of the official figures of the Malayan shipments during July being hailed as evidence that the Restriction Scheme is at last functioning effectively. On top of this, the news that the Malayan Government is about to redouble its anti-smuggling measures is taken as an indication of an early decline in the amount of "foreign imports" into Singapore.

There can be no question that smuggling activities have now reached really alarming proportions, and that the much advertised increase in the exports from the Dutch East Indies in recent months can be attributed, to a very large extent, to this source. When it is realized that the present preventive fleet of launches in use by the Malayan Government numbers only nine vessels, and that the coast line patrolled reaches approximately 600 miles, the scope for unlawful operations becomes obvious, and gives point to a local description of Johore as the "Smugglers' Paradise." This consideration, moreover, gives some credence to the estimates put forward in certain responsible quarters to the effect that the monthly figure of smuggled rubber reaches as much as 3,000 tons.

These influences have generated a good deal of life into the share market and movements in the Stock Exchange have been in direct contrast to the trifling alteration in the price of the commodity. Since I last wrote, in fact, quotations of many shares have risen by fully 10 per cent, and there has been a general scramble for stock with sellers few and far between. In buying rubber shares investors are showing plenty of faith in the future course of the industry, as current share valuations seem likely to return little more than 5 per cent with the commodity at its present level and outputs curtailed to 60 per cent of standard.

ARGUMENTS as to the economic price level of rubber will, presumably, like the babbling brook, go on for ever; or at least, so long as the laws of supply and demand are interfered with and artificial conditions thus created. The chairman of the Vallambrosa Rubber Company has now entered the arena of theorists with the pronouncement that "while a rise again to a very high price would not be to the advantage of producers, what we all, producers and manufacturers, ought to aim at is a steady reasonable price of, say, 1/9d. per lb." The fact that this company produces its rubber at an f.o.b. cost of less than 6d., per lb., and that with its 1926-27 output selling at 1/8.30d. per lb.—or rather less than the "reasonable" price it was able to distribute a dividend to its fortunate shareholders of 112½ per cent robs the argument of most of its force, and is a further indication that in fixing the pivotal price of 1/9d. per lb. the British Government has created the impression that any price below this level is unreasonable.

However, not everybody is carried away by the official dictum. The computation just published in the *Straits Times* by Mr. J. S. M. Rennie, who was, until recent years, accountant with the well-known London agents, Messrs. Guthrie & Co., that 1/4.85d. per lb. is a normal level meets with the approval of many sound judges. Mr. Rennie's estimate is based on the theory that a fair capital value for an acre of mature rubber is £100, that 10 per cent is a fair basis of profit for a wasting asset, that 350 lbs. per acre is a fair figure to take as an average yield, and that 10d. per lb. is the average cost of production. In order to secure 10 per cent upon an investment under these conditions, a profit margin of 6.85d. per lb. would be required, giving a gross selling price of 1/4.85d. per lb. This calculation, of course, makes no allowance for the necessity of providing for amortization, depreciation and the accumulation of adequate reserves.

THE suggestion made by a correspondent of the London *Financial Times* that each rubber shareholder purchase at least one hundredweight of rubber and withdraw it from the market, thus relieving a weak market and forming a British "pool," has received much attention. Dozens of shareholders have written to the newspaper to indicate their approval of the idea and their willingness to join in such a concerted movement. Some who appear to have studied the plan more carefully, however, suggest that the scheme is quite pointless unless the rubber is taken permanently off the market and admit that the shareholders might find it difficult to make permanent use of one hundred pounds of crude rubber. The discussion of a "pool" on this side has so far served only to demonstrate that many shareholders would be disposed to take part in it under proper management.

You may imagine that the rubber trade here is watching closely for the next report on rubber consumption in the States. Those who placed high estimates on the tonnage of rubber that would be used by America in 1927 are delighted at the way your monthly absorption has been running up and are praying that the rate may be sustained. Conflicting reports come from your side as to how likely this is to happen, but as nearly as I can make out, your 1927 consumption will probably not greatly exceed that of 1925. Consumption outside the United States is holding up well and far-sighted shareholders see in these lesser customers a great and satisfying hope for the future.

Yours faithfully,

THE GENTLEMAN FROM MINCING LANE.

LATE MARKET PRICES

Crude, Scrap & Reclaimed Rubber - Cottons and Fabrics
AUGUST 18, 1927

COTTON

THE publication of the government cotton report in the second week of August, putting the condition of the crop at 69.5 and indicating a yield of 13,492,000 bales, transcended all other market factors and was a complete surprise since it was fully a million bales below average expectations. The report came on a well liquidated market and resulted in a wild wave of buying. Trading fluctuations reached the maximum of 200 points in one day. Middling upland spot prices jumped from 17.15c to 19.45c on August 8. Since then spot prices have been extremely nervous, ranging from 18.90c to 20.00c, the closing price on this date. Future positions follow:

	High	Low	Aug. 18 Close	Aug. 3 Close
October	19.98	19.75	19.76	16.95
December	20.00	20.01	20.01	17.18
January	20.30	20.01	20.05	17.23
March	20.45	20.21	20.23	17.47

Tire Fabrics

Since the government cotton crop was published the business done in tire fabrics has been light in volume and has consisted largely of meeting small orders as they are received without regard to what may be done when more is known of the staple cotton situation. In several houses prices were advanced without regard to sales. As a whole the market in fabrics has been quiet, with no marked movement of square woven or cord fabrics. Late prices follow:

CORD			
Peeler, carded, 25/5/3	lb.	.44 @	.45
Peeler, carded, 23/4/3	lb.	.44½ @	.46½
Peeler, carded, 13/3/3	lb.	.43 @	.46
Peeler, carded, 15/3/3	lb.	.42½ @	.44
Egyptian, carded, 23/5/3	lb.	.60 @	.62
Egyptian, carded, 23/5/3	lb.	.66 @	.68
CHAFERS			
Carded American, 8 oz.	lb.	.40 @	.42
Carded American, 10 oz.	lb.	.43½ @	.45
Carded American, 12 oz.	lb.	.43 @	.44
Carded American, 14 oz.	lb.	.44½ @	.45
LENO BREAKER			
Carded American, 8¼ oz.	lb.	.41½ @	.42
Carded American, 10¼ oz.	lb.	.42 @	.43
SQUARE WOVEN			
Carded American, 17¼ oz. 23-11 ply	lb.	.43 @	.45
Carded American, 17¼ oz. 10-5 ply	lb.	.40 @	.41

Sheetings

Comparatively little business has been put through in sheetings in the past fortnight, the uncertain cotton market being partly responsible for this situation. Quotations have held extremely firm. A few sales in 36-inch and 40-inch ran above 5,000 pieces on August 18. Prices follow:

40-inch 2.50-yard	yd.	.12¼ @	.13
40-inch 2.85-yard	yd.	.11½ @	.12
40-inch 3.15-yard	yd.	.12 @	.12¼
40-inch 3.60-yard	yd.	.10¼ @	.11
40-inch 3.75-yard	yd.	.09 @	.09½
40-inch 4.25-yard	yd.	.08 @	.08¾

Ducks

The situation in cotton ducks, although somewhat unsettled in the early part of August, has firmed up appreciably. Larger buyers are missing with their inquiries, and on small lots mills hold their prices steady. Belting duck was held for 37½c a pound in the middle of the month. The general tone of the market is strong. Late prices follow:

Belting and Hose	lb.	.35 @	—
Enameling	lb.	.36 @	.41
Shoe Ducks	lb.	.30 @	.33½
Single filling	lb.	.15 @	.17½
Double filling	lb.	.18 @	.19

RECLAIMED RUBBER

Activity in reclaimed rubber continues lively. Movement of stocks has increased very materially in the past few weeks and reclaimers are reported to be working at capacity again. Due to an increase in scrap tube prices, the quotation on compounded tube reclaim has advanced 1c to 13½ @ 14. Other grades of reclaimed rubber have been firm with an upward tendency, making them excellent buys at present levels. A rise may be expected soon. Quotations follow:

High Tensile			
Super-Reclaim No. 1 Black	lb.	.17 @	.17½
Super-Reclaim No. 2 Black	lb.	.14 @	.14½
High Tensile Red		.14 @	.14½
Shoe			
Unwashed	lb.	.08 @	.08½
Washed	lb.	.10¼ @	.10¾
Tube			
No. 1 (Floating)	lb.	.17 @	.17½
No. 2 (Compounded)	lb.	.13½ @	.14
Tires			
Black, washed		.10 @	.10¼
Black, unwashed		.08¼ @	.08½
Black selected tires	lb.	.09 @	.09¼
Dark Gray	lb.	.12 @	.12½
Light Gray	lb.	.13 @	.13¼
White	lb.	.15 @	.15½
Truck, Heavy Gravity	lb.	.07½ @	.07¾
Truck, Light Gravity	lb.	.08 @	.08¼
Miscellaneous			
Mechanical Blends	lb.	.07 @	.08
Red	lb.	.14 @	.14½

SCRAP RUBBER

The scrap rubber situation has tightened up considerably since our last report and prices to consumers have been raised in some cases a full cent a pound. Scrap accumulations are very limited and dealers, as a result, are forced to get more for available stocks. Demands from reclaimers are strong. Prices follow:

(Prices to Consumer)

Auto tire peelings	ton	35.00	@37.50
Standard White auto	ton	55.00	@57.50
Mixed auto	ton	25.00	@26.00
Bicycle tires	ton	24.00	@25.00
Clean solid truck tires	ton	27.00	@28.00
Boots and shoes	lb.	.01⅜ @	.01⅞
Arctics, trimmed	lb.	.01⅛ @	.01⅜
Arctics, untrimmed	lb.	.00⅞ @	.01
Inner tubes, No. 1	lb.	.08 @	.08½
Inner tubes, No. 2, compounded		.06 @	.06¼
Inner Tubes, Red	lb.	.06⅜ @	.06⅝
Air Brake Hose	ton	32.00	@34.00
Rubber Hose	ton	15.00	@17.00

CRUDE RUBBER

CRUDE rubber trading on the outside market has been fairly steady since our last report, with a trend toward somewhat higher prices. A short-lived reactionary movement took place in the second week of August, attributed in part to small increases in London stock. Following this bearish activity, prices firmed and spot quotations rose to 36c and 36⅛c, but subsequently dropped to 35½c. In the third week of August an unusual situation occurred when prices in the outside market were from ¼ to ½c under quotations on the Rubber Exchange. This would imply that brokers and dealers have disregarded price trends on the Exchange. Late quotations follow:

Plantations—		
Ribbed Smoked Sheets		
Spot	.35½ @	.35¾
August	.35½ @	.35¾
September	.35½ @	.35¾
October/December	.36 @	.36¼
January/March	.36½ @	.36⅝
First Latex, crepe spot	.35½ @	.36¼
Amber Crepe, No. 2, spot	.32½ @	.32¾
Amber Crepe, No. 3	.32¼ @	.32½
Amber Crepe, No. 4	.31½ @	.31¾
Brown Crepe, Rolled	.29½ @	.29½
Brown Crepe, Clean, thin	.31¾ @	.32
Brown Crepe, Specky	.31 @	.31¼
Liquid Latex, per gal.	1.50 @	1.75
Pontianac—		
Bangermassin	Nominal	
Palembang	Nominal	
Prime Pressed	Nominal	
Sarawak	Nominal	
Paras—		
Up-river Fine	.30¾ @	.31
Up-river Medium	.29 @	—
Up-river Coarse	.20¼ @	.20½
Acre Bolivian, fine	.31¼ @	.31¾
Tapajos, fine	.39 @	—
Cut Beni Bolivian, fine	.45 @	—
Caucho Ball—		
Upper, shipment	.21¼ @	.21¾
Island, fine	— @	.25½
Centrals—		
Corinta, scrap	.27 @	—
Esmeraldo, sausage	.20½ @	.21
Guayule, washed and dry	— @	.28
Africans—		
Benguela, No. 2	Nominal	
Congo, upper, black	Nominal	
Congo, upper, red	Nominal	
Balata—		
Block, Columbia	.35½ @	.38
Block, Cuidad	.34½ @	.35
Gutta Percha—		
Siak	.24 @	—
Red Macassar	3.00 @	—

LONDON MARKET

Standard Ribbed Smoked Sheets—*Buyers*		
Spot	.17 3/16d @	.17 5/16d
August	.17 3/16d @	.17 5/16d
September	.17½ @	.17⅝
October/December	.17¾ @	.17⅞
January/March	.18¼ @	.18⅜

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—*Sellers*		
Spot	.17⅛ @	—
August	.17⅜ @	—

Recent daily closing prices on the Rubber Exchange of New York are shown on the Financial Page in the News Section of this issue. Daily spot prices of Ribbed Smoked Sheets are given in the Statistical Section.

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LATE RUBBER CHEMICAL PRICES

Accelerators — Colors — Softeners — Compounding Materials

AUGUST 19, 1927

PRODUCERS and distributors of rubber chemicals and compounding materials are very optimistic over present conditions in the industry. In general they report an increased demand for materials as compared with late July and early August. Rubber factories, both tire and mechanical goods, have increased their production schedules and are calling for larger shipments of all grades of compounding materials. Prices have been firm with no changes recorded on staple lines.

Interest during the month has centered on the announcement of the introduction of two new low temperature accelerators, "Safex" and "833." The growing tendency today in the rubber industry is towards a further reduction in curing time and temperature. The introduction of low temperature accelerators has in the past involved many new problems in their use, especially premature curing on the mill and in the air, but the new accelerators just announced are said to be reasonably safe in this respect.

ACCELERATORS

Organic				
A-7	lb.	.70	@	.80
A-11	lb.	.75	@	.90
A-16	lb.	.65	@	.85
A-19	lb.	.75	@	.90
Aldehyde ammonia, crystals	lb.	.65	@	.70
Aniline oil, drums	lb.	.17	@	.17½
Crylene	lb.	.70	@	—
paste	lb.	.50	@	—
Di-Ortho-Tolylguanidine	lb.	.85	@	.90
Diphenylguanidine	lb.	.68	@	.72
Ethylidene aniline	lb.	.60	@	.65
Excellerex	lb.	.35	@	.40
Formaldehyde Aniline	lb.	.38	@	.42
Grasselerator 102	lb.	.65	@	.70
Grasselerator 552	lb.	4 80	@	5.00
Grasselerator 808	lb.	1.15	@	1.35
Grasselerator 833	lb.	1.50	@	1.75
Heptene	lb.	.55	@	—
Hexamethylene-tetramine	lb.	.65	@	.70
Lithex	lb.	.18	@	.20
Monex	lb.	3.25	@	—
Piperidine-Piperidyldithio-Carbamate	lb.	4.80	@	5.00
Quinoidine	lb.	.40	@	—
R & H 40	lb.	.50	@	.55
R & H 50	lb.	.50	@	.55
Safex	lb.	1.20	@	1.25
Tensilac, No. 39	lb.	.55	@	.60
Tensilac, No. 41	lb.	.65	@	.70
Thiocarbanilide, kegs	lb.	.26	@	.28½
Thionex	lb.	3.25	@	—
Trimene	lb.	.75	@	—
base	lb.	1.20	@	1.35
Triphenylguanidine	lb.	.65	@	.70
Vulcanex	lb.	.82	@	.86
Vulcone	lb.	.70	@	.74
Z 88	lb.	.75	@	1.00
Lead, sublimed blue	lb.	.08¼	@	.08¾
Inorganic				
Lead, white	lb.	.08¼	@	.08¾
Litharge, domestic	lb.	.11	@	.13
Magnesia, calcined, light	lb.	.06	@	.12
heavy	lb.	.04	@	.04½

COLORS

Blacks (See Compounding Materials)				
Blues				
Prussian	lb.	.33	@	.35
Ultramarine	lb.	.08	@	.35
Browns				
Sienna, Italian	lb.	.05	@	.12½
Umber, Turkey	lb.	.04½	@	.06
Greens				
Chrome, light	lb.	.27	@	.31
medium	lb.	.29	@	.32
dark	lb.	.31	@	.34
Chromium Oxide, bbl.	lb.	.35	@	.38
Reds				
Antimony crimson, 15/17	lb.	.40	@	—
sulphur free	lb.	.50	@	.52
golden 15/17 F.S.	lb.	.16	@	.25
Indian English (dom.)	lb.	.08	@	.10
Oximony	lb.	.13¼	@	—
Para toner	lb.	.13	@	.14
Red oxide, reduced	lb.	.10	@	.11
pure	lb.	.14	@	.15
Venetian red	lb.	.02	@	.06
Vermillion, quicksilver, English	lb.	1.85	@	1.95
Whites				
Lithophone, Akcolith	lb.	.05 3/5	@	.06
Lithophone, Azolith	lb.	.05¼	@	.05¾
Lithopone, Vanolith	lb.	.05¾	@	—
Titanox	lb.	.12	@	.12½
Calc. Base Pigment	lb.	.10½	@	.11
Zinc Oxide—American Process				
American Azo:				
ZZZ (lead free)	lb.	.06½	@	.07
ZZ (leaded)	lb.	.06⅞	@	.07⅛
Zinc Oxide—French Process				
White seal	lb.	.11⅞	@	—
Green seal	lb.	.10⅞	@	—
Red Seal		.09⅞	@	—
Yellows				
Chrome	lb.	.17	@	.20
Ocher, French medium	lb.	.03½	@	.06
domestic	lb.	.01⅝	@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85	@	24.50
Ammonia carbonate	lb.	.13½	@	.14
Are-O-Sol	ton	8.00	@	11.00
Asbestine	ton	14.75	@	18.00
Barium carbonate	lb.	.02¼	@	.04
Barium Dust	lb.	.05	@	.06
Barytes southern off-color,	ton	12.00	@	18.00
Western prime white	ton	23.00	@	—
imported	ton	27.00	@	36.00
Basofor	lb.	.04½	@	—
Blacks				
Arrow "Aerfloted"	lb.	.09	@	.13
Bone Black	lb.	.05½	@	.11
Carbon, compressed	lb.	.07½	@	.11½
Carbon, uncompressed	lb.	.07	@	.11
Drop Black	lb.	.06	@	.10
Lamp Black	lb.	.12	@	.40
Micronex	lb.	.08	@	.12
Velvetex carbon	lb.	.04	@	.07
Blanc fixe dry f.o.b. works	lb.	.04	@	—
Carrara filler	lb.	.01¾	@	.02
Catalpo (fact.)	lb.	.02	@	—
Chalk	ton	12.00	@	14.00
Clay, China, domestic	ton	8.00	@	9.00
Aerfloted Suprex	ton	9.00	@	20.00
Mineral Flour, c. l. fob mine	ton	20.00	@	23.00
Tensulite		15.00	@	—
Glues, extra white	lb.	.20	@	.29
medium white	lb.	.19	@	.25
common bone	lb.	.14	@	.15
Magnesia, carbonate	lb.	.07½	@	.10
Mica, powdered	ton	90.00	@	100.00
Rotten Stone (powdered)	lb.	.02½	@	.04½
Soapstone, powdered	ton	15.00	@	22.00
Starch, powdered	cwt.	3 30	@	3.70
Talc, domestic	ton	16.00	@	18.00
Velvetex	lb.	.04	@	.07
Whiting, commercial	cwt.	.85	@	1.00
English cliffstone	cwt.	1.50	@	—
Superfine	ton	10.00	@	12.00
Vansulite	ton	12.00	@	—
Wood pulp YXX	ton	45.00	@	—
Wood pulp X	ton	25.00	@	—
Zinc Carbonate	lb.	.10	@	.12

MINERAL RUBBER

Gennasco (factory)	ton	50.00	@	52.00
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00	@	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00	@	47.00
Paradura	ton	62.50	@	65.00
Pioneer, MR, solid	ton	41.00	@	43.00
Pioneer—granulated	ton	51.00	@	53.00
Robertson, MR, solid	ton	34.00	@	80.00
M.R. (gran)	ton	34.00	@	80.00

SOFTENERS

Acids				
Nitric, 36 degrees	cwt.	5.00	@	5.25
Sulphuric, 60 degrees	ton	10.50	@	11.50
66 degrees	ton	15.00	@	16.00
Tartaric, crystals	lb.	.31½	@	—
Acids, Fatty				
Stearex	lb.	.10	@	.14
Stearic, single pressed	lb.	.10	@	.11
Double pressed	lb.	.11½	@	.12
triple pressed	lb.	.13½	@	.14
Alkalies				
Caustic soda, 76%	cwt.	3.76	@	3.91
Soda ash, 58% C.L.	cwt.	1.42½	@	1.45
Oils				
Castor, No. 3 bbls.	lb.	.12	@	.13
Corn, crude, bbls.	lb.	.09⅜	@	.10
refined	lb.	.11	@	—
Cottonseed, crude		.08	@	—
Cycline	gal.	.27	@	.34
Dispersol A (light)	lb.	.15	@	.16
Dispersol B (dark)	lb.	.14	@	.15
Fluxrite	lb.	.05	@	.06
Glycerine, C.P. drums	lb.	.26	@	.26½
Linseed, Raw C.L. bbl.	lb.	.10½	@	.11½
Palm Lagos	lb.	.07¼	@	.07½
Niger	lb.	.07⅜	@	.08
Vansulol	lb.	.10½	@	—
Peanut, domestic, crude	lb.	.11	@	—
Petrolatum, white	lb.	.08⅞	@	.09
amber	lb.	.03⅜	@	.04
dark amber	lb.	.03⅜	@	.03½
Pine, steam distilled	lb.	.70	@	.72
Rapeseed, refined	gal.	.82	@	.83
Rosin, first rectified	gal.	.70	@	—
second rectified	gal.	.73	@	—
Resins and Pitches				
Pitch, Burgundy	lb.	.06½	@	.07½
coal tar	gal.	.05½	@	.06
pine	bbl.	9.00	@	10.00
Rosin, grade K	bbl.	10.75	@	—
Pigmentar	gal.	.33	@	.41
Tar Retort	bbl.	16.50	@	17.00
Solvents				
Acetone, pure	lb.	.14½	@	—
Alcohol denatured, No. 1 bbls.	gal.	.37½	@	.44½
Benzol, 90%	gal.	.28	@	—
pure		.29	@	—
Carbon bisulphide	lb.	.05½	@	.06¼
Carbon tetrachloride		.06⅜	@	.07½
Motor gasoline, steel bbls.	gal.	.20	@	—
Naptha, V. M. & P.	gal.	.14	@	—
Turpentine, spirits	gal.	.65	@	.67
wood	gal.	.63	@	.64
Waxes				
Beeswax	lb.	.58	@	.60
Carnauba	lb.	.40	@	.50
Ceresin, white	lb.	.13	@	.14
Montan, crude	lb.	.07	@	.07½
Ozokerite, black	lb.	.30	@	—
green	lb.	.26	@	.30
Miscellaneous				
RSL Mold Solution	gal.	.75	@	.100

ANTI-OXIDANTS

Antox	lb.	.81	@	.83
VGB	lb.	.55	@	.66

SUBSTITUTES

Black	lb.	.08	@	.14
White	lb.	.10	@	.16
Brown	lb.	.10	@	.15

VULCANIZING INGREDIENTS

Sulphur Chloride (drums)	lb.	.03½	@	.06
Sulphur flour.				
Superfine bags	cwt.	2.20	@	2.80
Superfine, bbls.	cwt.	2.55	@	3.10
100% pure, refined, bags	cwt.	2.60	@	3.15
bbls.	cwt.	2.95	@	3.50

RUBBER CLAYS of the HIGHEST QUALITY

ARGOSITE CLAY

ULTRA FINE
REMARKABLY ADHESIVE
UNMATCHED PURITY

CONGAREE CLAY

EXCEEDING STANDARD
SPECIFICATIONS

UNITED CLAY MINES CORP'N. **TRENTON, N. J.**

EVERY BATCH
EVERY TIME

DIPHENYL-GUANIDINE

is the universal rubber accelerator. Use it every batch—in reclaims, in hard rubber goods, everything. Use it every time with confidence that it will always be the same standard of high quality.

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with a reputation

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Rubber Sulphur
"TUBE" BRAND VELVET
Rubber Sulphur

Specify "Tire" and "Tube" Brands on your orders. This will assure you of Stauffer quality and service.

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STANDARD
SINCE 1903
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A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Chemicals and Compounding Materials

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ACCELERATORS
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Grasselerator 552
Grasselerator 808

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Rubber Service Dept.
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Manufacturers for forty years
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612 Metropolitan Bldg., Akron, O.

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Labels—all-rubber two color brands.

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Triphenylguanidine
Para-Nitrosodimethylaniline
Thiocarbanilide

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CARBON BLACK—*Aerfloted* Arrow Black for rubber compounding. Standard for grit-free uniformity.

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ACCELERATORS
A-7 A-11 A-16 A-19 Z-88
THIOCARBANILIDE
FORMALDEHYDE-ANILINE

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Complete problem laboratory for your use.
Send for latest quotations

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Direct Factory Representation

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ACCELERATORS
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THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

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A neutral gum for rubber compounding.
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Dipped Goods Naphthas
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STEAREX, the product standardized for rubber compounding.
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The Market Place

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The Akron Standard Mold Co.
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SPECIAL MACHINERY
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MOLDS & CORES— for automobile tires; general machine work.

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THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

Chemicals and Compounding Materials — Machinery and Equipment—Crude, Reclaimed and Scrap Rubber—Fabrics—Rubber Products — Consulting Engineers.

Machinery and Equipment (continued)

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"Goes a long way to make friends"

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Manufacturers of all classes of Rubber Goods.

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Then you should believe in telling the rubber industry all about them. The MARKET PLACE is the logical place to display your wares.

THE MARKET PLACE Section Continued on Next Page

A Section Devoted to Listings of Leading Producers and Distributors of Raw Materials, Machinery and Equipment, and Supplies for the Rubber Industry.

The Market Place

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Rubber — Crude, Scrap, Reclaimed

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Uniformity, reliability, cleanliness.
Pequanoc Rubber Co.
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RECLAIMED RUBBER—
A standardized grade for every requirement.
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"44 Years Serving the Industry Solely as Reclaimers"

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TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

NEW July statistics covering crude rubber imports, consumption and stocks have been noted in this section and many other tables have likewise had new figures added to them. The July rubber consumption report of the Rubber Association was surprisingly low, only 29,219 long tons being consumed whereas it had been estimated that more than 31,000 tons would be used.

Imports of rubber in July, according to the first available estimates, totalled 36,636 long tons. The total tonnage of rubber on hand and afloat at the end of July was reported by the Rubber Association as 139,056 long tons. This is the greatest tonnage recorded at the end of any month in recent years. A large increase in stocks on hand, caused by the excess of imports over consumption, is responsible for this record figure. Stocks afloat show a decrease from June 30.

June production of automobile casings, according to statistics released by the Rubber Association, increased over May. Inner tube production, however, suffered a decline. Shipments of both casings and inner tubes advanced while inventories remained unchanged.

Rims inspected and approved during July were less than in June. The July total was 1,679,587, of which 84.4 per cent were balloon rims.

London stocks of crude rubber increased in the first two weeks of August, the tonnage of 64,557 on August 13 being the largest since the third week in June. Stocks in Singapore and Penang at the end of July were 22,558 long tons.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,593	37.02	31,736
Feb.	24,696	18,532,115	33.50	979	779,406	35.53	23,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,681	74.52	31,177
Aug.	33,412	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	26,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct.	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
1926:							
Jan.	42,404	72,528,151	76.36	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,470	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.02	1,437	1,519,870	47.20	35,675
Oct.	29,333	25,300,483	38.50	1,366	1,316,270	43.02	27,967
Nov.	38,925	34,661,631	39.97	1,482	1,320,461	42.00	37,443
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	43.16	35,850
1927:							
Jan.	43,340	36,753,719	37.99	1,526	1,444,734	42.22	41,814
Feb.	28,338	23,110,257	36.41	2,451	2,277,297	41.47	25,887
Mar.	35,514	28,693,026	36.07	2,763	3,249,665	52.50	32,751
Apr.	46,202	37,284,806	36.15	1,575	1,428,425	40.45	44,627
May	36,543	30,998,657	37.87	2,782	2,501,562	41.74	33,761
June	33,045	27,833,770	36.28	1,775	1,550,592	38.99	31,270
July*	36,636	29,558,611	37.52				
Aug.							
Sept.							
Oct.							

*Official estimate based on arrivals in New York and Boston.

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927
January	5,045	16,938	30,106	29,058	29,638	32,196	31,518
February	5,955	14,767	30,149	25,736	29,761	31,136	30,137
March	9,190	21,408	36,629	28,385	33,498	32,936	36,141
April	13,084	19,294	29,085	27,129	34,139	32,696	35,871
May	16,023	23,246	36,155	25,845	35,322	29,364	34,592
June	16,142	31,713	24,272	22,753	35,822	28,598	33,801
July	18,310	24,522	17,685	23,396	36,053	27,577	29,219
August	23,649	29,361	20,359	28,982	35,909	34,533	
September	16,705	24,410	17,594	31,497	31,691	32,904	
October	16,814	26,881	21,321	31,520	29,047	29,836	
November	14,105	24,950	20,437	27,289	28,853	28,080	
December	15,482	25,070	21,902	27,199	23,748	26,293	
Totals	170,504	282,560	305,694	328,769	388,481	366,149	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926	1927
Jan./Mar.			96,776	87,609	95,263	94,301	99,216
Apr./June	65,463	127,360	89,493	75,674	104,099	87,109	
July/Sept.			55,621	83,813	99,493	93,793	
Oct./Dec.	105,962	155,067	63,617	92,656	85,789	83,212	
Totals	171,425	282,427	305,507	339,752	384,644	358,415	

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
June 11	3,492	486	781	287	5,046
June 18	4,889	173	1,903	505	7,470
June 25	5,256	922	1,331	2,971	10,480
July 2	5,141	646	837	988	7,612
July 9	3,646	371	651	830	5,498
July 16	4,062	438	1,968	1,380	7,848
July 23	3,005	845	1,201	1,705	6,756
July 30	4,215	657	1,342	315	6,529
August 6	3,205	650	1,884	320	6,059
August 13	3,955	825	1,646	112	6,538

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1925																																
January	—	39⅞	39⅞	—	39	39	39¾	38⅝	38¾	38⅝	—	37⅞	36½	36⅜	36	35⅞	35¼	—	34⅞	34⅞	35	35⅛	36¼	36¼	35⅞	35⅝	35½	35⅝	35	35	35⅝	36⅜
February	—	35⅝	34⅝	34½	34½	35⅝	—	—	35¾	34¾	—	—	35⅞	35⅞	35	36⅞	35⅝	—	35⅞	36⅜	36⅞	36⅜	36¼	37⅛	37⅞	37⅞	38⅛	38⅝	—	—	—	36
March	—	38⅝	35⅝	38⅞	38⅞	39½	39½	—	39⅝	40⅞	—	—	40⅜	40⅛	40	40⅝	40½	—	41⅛	41⅝	41⅝	41⅝	42½	42⅞	43⅛	43⅞	43½	43⅞	45⅜	44⅛	42¾	41
April	—	41¼	41¼	41⅜	41⅜	42⅛	42⅛	43¼	43⅞	—	—	—	40⅜	40⅛	39⅝	40⅜	40½	41	41¼	—	44	44⅛	43½	43⅞	44⅜	45	45⅜	45⅜	—	—	—	48⅝
May	—	45	45⅞	—	47¼	48⅜	50⅞	52½	52⅝	—	59	57	—	59¼	60¾	60⅝	60⅝	44	44	44⅛	44⅛	44⅛	43⅞	44⅜	44⅜	43⅞	43⅞	43⅞	44⅛	44⅛	—	43½
June	—	72	74⅜	75¼	76½	75⅜	75⅞	75⅞	74	75¼	74⅞	76⅜	74⅞	75¼	75½	73⅝	73⅝	72⅝	73⅝	71⅝	71⅝	71⅝	69⅜	68⅜	63	63	63¼	65⅞	69½	69½	—	58½
July	—	81⅛	85⅜	88⅜	88½	90½	90⅝	95⅝	94⅞	99⅞	106¼	—	110	105⅜	110⅝	117	116¾	118⅞	121	117⅝	119	117⅝	112¾	112¼	107⅜	96¾	93¼	89⅝	85⅝	82⅝	—	77¼
August	—	94½	95½	88⅜	85⅝	88½	81⅝	79	78¼	80½	81½	76½	92	92½	—	98½	80½	80½	83½	82½	82½	82½	82½	82½	85¼	85¼	87¾	89¾	91½	91½	—	103⅜
September	—	88¼	87⅛	86	81¼	81⅝	—	81⅛	80½	83	—	—	92	97	98⅛	93⅜	92⅝	92⅝	—	94¼	92	98¾	93½	99⅛	99¼	89¾	91¾	91½	99¼	100¼	90	83
October	—	91¼	91⅝	92	94½	—	97½	—	99¼	101	—	—	97½	95½	97	99¼	99	99	101¼	102	102	99¼	99⅛	99¼	99	99¼	101½	99¼	100¼	98	88⅞
November	—	99¼	—	98⅜	98¼	100	100¾	—	98¼	99½	100¼	101⅜	104½	105½	—	109	107	107	109⅜	110⅜	110⅛	110½	110⅛	109	106¼	—	—	107	91¼	91¼	98½
December	—	106⅝	108½	107¾	107¾	108¼	—	108	109	109¼	106	105½	106½	—	101	99¾	90¾	93	88¼	86⅝	—	—	90¼	88¾	88¾	—	—	91	93	91¼	91¼	98½
1926																																
January	—	67	67½	66¼	66⅜	68	69	87¼	87¼	87¼	86½	85½	87¼	87¼	88¼	88¼	88¼	85½	84½	88¼	88¼	88¼	75½	75½	75	72	72½	68	66½	67	69¼	70½	69	—	—	79½
February	—	67	67½	66¼	66⅜	68	69	87¼	87¼	—	86½	85½	87¼	87¼	88¼	88¼	88¼	85½	—	88¼	88¼	88¼	75½	75½	75	—	—	66	67	61	60	—	—	59½	58	—	—	62¾
March	—	55	58	—	59	53½	53½	57½	58	56	56	55½	56	56	56	56	60	61½	63	60½	61	61	60½	60	59	61	61½	61¼	60	59½	58	58	59
April	—	59	59	59	59	57½	58	56½	56½	61	60	63	61½	62	61	62	60½	60½	61	62	61	61	61½	61	60	59½	59	59	58	58	58	59
May	—	48½	50	50¼	49¼	49¾	49⅝	49⅝	49⅝	49¾	49¼	49	51½	50½	49¼	49¼	48½	48½	49¼	47½	47½	47½	48½	47½	47¼	47¼	47¼	48	48	48	48	51¼
June	—	42	42	41½	42	41¼	41½	41½	42	42	42	42	42	42	42	42	42	42	42	43	43	44	43	43	43	43	43	45	45	49	49	47¾
July	—	41½	42	41½	42	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	42	42	42	42	42½
August	—	38⅜	38½	38¼	38¼	38¼	39	38¼	38¼	37¾	37¾	37¾	37½	37½	37½	37½	37½	37½	37½	37½	37½	37½	38¼	38¼	38¼	38¼	38¼	41½	41	39	39	39½
September	—	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	39	39	39	40	38½
October	—	43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
November	—	41¼	—	41	43¼	42¾	42¾	42¾	42¾	42¾	42¾	42¾	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½
December	—	36¾	37½	37½	41¼	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	42½	42½	42½	42½	42½	42½	42½	42½	42½	38½
1927																																
January	—	—	—	38½	39	39	39¼	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜
February	—	37⅞	37⅞	37½	37½	37½	37½	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜	37⅜
March	—	39¾	39⅝	40	40¼	40¼	40¼	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜
April	—	41¼	41¼	41¼	41	41	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼
May	—	—	40½	40¾	40½	41	41	41	40⅜	—	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40⅜	40½	40⅜
June	—	40⅝	40¼	40¼	40¼	—	—	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾	39¾
July	—	35½	—	—	—	—	—	35¼	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾
August	—	35¼	35¼	35¼	35¼	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35½	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾	35¾
Sept.																																
Oct.																																
Nov.																																
Dec.																																

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	
May	15.25	27.39	18.89	58.47	47.75	40.76	
June	15.11	26.88	18.81	77.26	42.50	37.25	
July	14.67	26.10	22.16	103.16	41.03	34.44	
Aug.	13.93	28.84	26.17	82.99	38.50		
Sept.	14.44	28.95	27.56	88.88	41.00		
Oct.	19.78	26.93	31.13	98.01	42.50		
Nov.	23.88	27.14	34.33	104.80	38.50		
Dec.	27.42	26.60	37.88	98.51	38.25		
Average for Year	17.50	29.45	26.20	72.46	48.50		

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Fifth Restriction Year—Fourth Quarter

Day	Aug.	Sept.	Oct.	Day	Aug.	Sept.	Oct.
1	—			16	17⅜		
2	16⅞			17	17⅝		
3	17			18	17⅜		
4	17¼			19	17⅜		
5	17¼			20	17¼		
6	17¼			21	—		
7	—			22			
8	17¼			23			
9	17⅛			24			
10	17¼			25			
11	17½			26			
12	17⅝			27			
13	17¾			28			
14	—			29			
15	17⅜			30			
				31			

(The average price for the period for which daily prices are reported above is approximately 17,308 pence. The British Colonial Secretary has announced that only 60% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27
November-January	14.285	14.175	17.9983	46.709	19.265
February-April	16,858	12.917	19.356	28.103	19.696
May-June	14.242	10.974	38.469	21.001	18.739
August-October	14.944	14.632	43.269	20.199	18.165

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Cents July	August Cents	Day of Month	July Cents	August Cents	Day of Month	July Cents	August Cents
1	17.10	18.25	11	17.65	19.70	21	18 30	
2	17.15	17.85	12	17.75	19.40	22	18 60	
3		17.00	13	17.70	18.90	23	18.55	
4		17.45	14	17.75		24		
5	17.05	17.10	15	18.00	19.40	25	18.95	
6	17.15	17.25	16	18.30	19.95	26	18.80	
7	17.10		17		19.95	27	18.70	
8	17.15	19.45	18	18 05	20.00	28	18.90	
9	17.35	19.95	19	18.35	20.45	29	18 70	
10		19.70	20	18.35	21.10	30	18.30	
						31		

Average Monthly Price Per Pound

Month	1925 Cents	1926 Cents	1927 Cents	Month	1925 Cents	1926 Cents	1927 Cents
Jan.	23.99	20.85	13.42	Aug.	23.72	18.57	
Feb.	24.70	20.60	14.10	Sept.	23.79	17.02	
Mar.	25.64	19.35	14.32	Oct.	21.77	13.14	
Apr.	24.54	19.13	14.75	Nov.	20.94	12.86	
May	23.41	18.92	16.07	Dec.	20.06	12.68	
June	24.13	18.57	16.95	Average for Year	23.45	17.53	
July	24.68	18.71	18.00				

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At	ON HAND			AFLOAT			AND AFLOAT ON HAND		
End of	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	60,870	55,198	76,172	36,759	46,296	45,312	97,629	100,434	121,484
Feb.	54,109	58,035	91,186	41,475	46,935	42,166	95,584	104,970	133,352
March	52,494	61,822	85,740	40,577	43,567	49,600	93,071	105,389	135,340
April	50,143	55,261	92,757	53,465	41,905	38,963	103,608	97,166	131,720
May	52,064	64,360	94,563	46,846	40,303	44,181	98,910	104,663	138,744
June	50,997	60,460	89,250	51,202	40,907	47,233	102,199	101,367	136,483
July	46,245	64,900	98,469	46,003	38,062	40,587	92,248	102,962	139,056
Aug.	42,354	60,870		41,254	37,360		83,608	98,230	
Sept.	36,367	62,078		55,151	42,464		91,518	105,542	
Oct.	34,085	64,989		51,098	52,930		85,183	117,919	
Nov.	34,885	69,385		42,692	47,311		86,577	116,696	
Dec.	51,215	72,520		48,208	52,020		99,423	124,540	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At end of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,252	73,498	57,460	27,172	9,994
February	18,329	59,439	67,623	70,483	56,732	23,425	10,005
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	23,894
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727
August	30,674	73,211	72,112	48,427	49,700	4,619	30,764
September	35,504	72,175	70,977	54,523	44,011	5,453	35,077
October	41,743	69,229	68,536	58,891	37,523	5,086	42,141
November	45,550	70,786	68,548	60,074	33,593	3,869	44,057
December	50,652	69,792	72,299	60,246	29,488	5,697	48,921

At End of Recent Weeks

1926	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
December	44,395	46,349	47,324	48,382	—
1927					
January	48,948	50,756	52,484	53,662	54,786
February	55,740	56,939	56,962	58,659	—
March	59,945	61,516	61,300	63,167	—
April	62,634	63,861	65,033	65,511	67,034
May	68,187	68,041	66,668	67,054	—
June	67,105	67,454	66,894	64,486	—
July	63,917	64,163	63,511	62,819	63,626
August	64,177	64,557			

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1925	1926	1927	End of	1925	1926	1927
Jan.	15,925	16,726	25,440	July	15,894	23,101	22,558
Feb.	17,320	13,653	26,766	Aug.	17,251	23,362	
Mar.	17,261	18,389	27,844	Sept.	16,526	25,997	
Apr.	15,368	16,328	24,543	Oct.	15,346	26,614	
May	15,804	16,967	25,133	Nov.	19,788	25,486	
June	15,884	19,416	21,898	Dec.	18,840	26,443	

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1923	23,140,620	0.6	1925	26,001,664	66.8
1924	21,863,311	19.7	1926	24,199,524	78.8
1927			1927		
January	1,489,078	77.0	July	1,679,587	84.4
February	1,753,224	84.4	August		
March	2,071,989	85.1	September		
April	2,060,868	88.0	October		
May	2,169,208	86.9	November		
June	1,871,538	77.0	December		

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927
January	11,918,000	14,386,000	17,582,000	17,888,000
February	9,626,000	13,210,000	15,814,000	18,240,000
March	10,961,000	14,890,000	19,302,000	22,464,000
April	14,583,000	19,013,000	20,848,000	23,371,000
May	15,889,000	20,459,000	24,213,000	26,579,000
June	16,421,000	20,724,000	23,803,000	27,799,000
July	18,610,000	22,879,000	24,752,000	
August	19,825,000	22,323,000	26,912,000	
September	16,871,000	20,177,000	22,929,000	
October	18,029,000	19,826,000	23,973,000	
November	16,607,000	18,024,000	20,618,000	
December	15,663,000	17,954,000	21,419,000	
TOTAL	185,003,000	223,865,000	262,165,000	

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	40,932	45,259	51,633	60,845	61,237
Shipments	39,987	45,204	50,120	59,262	59,002
Inventory[2]	6,132	5,772	7,427	8,142	10,456

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	4,740	4,587	4,965	4,013	2,974	4,932	7,949	9,947	10,432
Feb.	4,908	4,865	5,095	3,924	3,436	4,458	8,928	11,164	11,075
Mar.	5,276	5,456	6,276	4,657	4,561	5,701	9,510	12,004	11,583
Apr.	5,341	5,346	6,299	5,498	4,980	5,701	9,088	12,461	12,122
May	5,467	5,023	6,151	5,954	5,211	5,657	8,611	12,343	12,462
June	5,418	5,422	6,202	6,737	5,724	6,253	7,243	11,968	12,462
July	5,587	4,950		6,298	6,337		6,421	10,592	
Aug.	5,607	5,872		4,760	6,744		7,261	9,732	
Sept.	5,007	5,706		4,569	6,040		7,681	9,318	
Oct.	4,505	5,103		5,580	4,544		6,670	9,917	
Nov.	4,229	4,324		3,671	3,733		6,955	10,297	
Dec.	4,760	4,683		3,601	4,718		8,142	10,456	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	50,850	60,116	70,706	82,614	76,618
Shipments	49,673	59,072	68,016	81,004	71,591
Inventory[2]	7,643	8,425	11,052	11,313	16,200

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	6,343	6,809	5,337	5,576	3,723	6,016	11,570	14,361	15,585
Feb.	6,339	6,825	5,658	4,971	3,736	5,120	13,023	17,090	16,075
Mar.	7,000	7,030	7,184	5,711	4,987	6,157	14,236	19,131	17,096
Apr.	6,851	6,554	7,373	6,704	5,051	6,359	13,618	20,674	17,801
May	6,846	6,149	6,737	8,040	6,304	6,140	12,501	21,141	18,389
June	6,942	6,171	6,306	9,032	6,898	6,832	10,409	20,243	17,858
July	7,544	5,729		9,140	8,569		8,635	17,267	
Aug.	7,618	7,424		6,923	9,579		9,271	15,462	
Sept.	7,254	7,590		6,665	7,762		9,950	15,312	
Oct.	6,612	6,208		7,845	5,474		8,726	15,929	
Nov.	6,266	4,852		5,406	4,045		9,491	16,604	
Dec.	6,999	5,277		4,991	5,463		11,313	16,200	

(1) Rubber Association of Amreica figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
2914	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926						
January	284,703	272,922	11,781	33,461	29,763	3,698
February	334,524	319,763	14,761	41,685	37,608	4,077
March	399,105	381,116	17,989	49,233	44,848	4,385
April	401,836	383,907	17,929	53,887	50,314	3,573
May	394,569	373,140	21,429	51,343	47,838	3,505
June	358,360	339,542	18,818	47,043	44,110	2,933
July	328,816	315,863	12,953	41,847	39,592	2,255
August	393,040	380,258	12,782	47,907	45,404	2,503
September	363,537	350,913	12,624	51,299	46,428	4,871
October	300,142	289,547	10,595	46,965	42,890	4,075
November	226,278	219,504	6,774	39,410	36,356	3,054
December	143,413	137,361	6,052	30,002	28,302	1,700
TOTAL	3,928,323	3,766,336	161,487	534,082	493,453	40,629
1927						
January	208,718	196,973	11,745	40,874	37,243	3,631
February	275,458	260,632	14,826	41,947	38,118	3,829
March	360,754	341,665	19,089	48,590	45,056	3,534
April	373,961	353,071	20,890	48,216	44,495	3,721
May	374,259	352,268	21,991	47,890	44,173	3,717
June	290,188	273,718	16,470	43,003	40,265	2,738
July	242,144	233,425	8,719	32,249	29,981	2,268
August						
September						
October						
November						
December						

Exports of Crude Rubber from Principal Producing Countries

	BRITISH MALAYA[1]							DUTCH EAST INDIES[2]							
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[2]	India & Burma[3]	Sarawak[4]	British North Borneo[5]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[3]	Amazon Valley[6]	All Other[6]	World Total[7]
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,523
1926:															
Jan.	30,452	10,237	20,215	4,246	1,273	416	289	275	4,444	6,125	10,614	549	1,213	1,279	49,310
Feb.	30,440	8,306	22,134	5,120	725	488	450	253	4,524	5,717	6,854	544	2,759	1,978	51,556
Mar.	35,012	14,800	20,212	5,177	1,113	792	561	418	4,527	5,566	11,984	573	2,126	1,899	54,948
Apr.	23,727	10,565	13,162	3,766	590	679	374	293	4,226	4,598	6,285	410	2,318	1,529	38,230
May	31,231	10,604	20,627	3,944	691	927	410	279	4,440	5,358	8,737	502	1,353	1,464	48,732
June	30,624	11,764	18,860	4,208	452	779	512	275	4,444	6,125	10,614	449	1,213	1,279	49,310
July	28,824	15,280	13,544	4,422	938	911	420*	439	4,618	5,612	13,112	1,521	1,565	1,148	48,250
Aug.	34,625	13,595	21,030	5,666	521	890	420*	316	4,132	5,699	10,390	378	1,888	1,097	*52,427
Sept.	35,913	13,972	21,941	6,015	651	888	420*	457	4,065	6,568	11,391	691	2,156	822	*56,055
Oct.	39,367	15,203	24,164	5,672	634	805	420*	385	4,058	6,998	11,491	661	1,904	1,023	*58,215
Nov.	34,302	12,201	22,101	4,228	1,110	685	420*	285	3,988	5,816	9,422	718	1,911	1,259	*51,943
Dec.	36,811	14,716	22,095	6,498	1,176	895	420*	338	5,054	7,117	12,786	790	3,821	714	*61,704
	391,328	151,243	240,085	58,962	9,874	9,155	5,299*	4,027	52,186	71,413	121,231	8,203	24,298	16,017	*620,750
1927:															
Jan.	34,946	14,995	19,951	6,697	921	959	500*	304	4,184	6,705	10,541	941	2,885	981	*55,569
Feb.	27,528	11,607	15,921	3,571	1,469	552	500*	360	4,707	6,526	10,634	675	2,082	1,098	*48,095
Mar.	41,346	17,464	23,882	7,142	1,124	997	500*	432	5,657	7,003	12,490	733	3,203	1,791	*64,954
Apr.	29,041	13,069	15,972	3,349	723	984	500*	526	4,666	5,530	10,035	557	2,374	1,495	*46,711
May	31,393	15,491	15,902	3,124	760	786	500*	348	5,430	5,528	14,099	586	2,431		
June	32,607	14,706	17,901	3,348		1,100	500*	409	4,818	5,519	9,402	772	1,030		
July	23,947	12,697	11,250									519	1,713		
Aug.															
Sept.															
Oct.															
Nov.															
Dec.															

(1) Mayalan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, and 3,263 in 1926. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, and about 20 tons in 1926. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, and about 60 tons in 1926. (6) Calculated from official import statistics of prinipal consumnig countries, viz., United States, United Kingdom, France, Germany, Italy, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States*	United Kingdom	France (h)	Germany	Canada (ac)	Japan (ac)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	236,977	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	342,378
1920	248,762	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2 008	567	370,641
1921	179,678	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,562
1922	296,267	11,724	24,352	27,546	9,207	15.934	6,430	2,493	2,643	172	-3,807	1,778	589	567	395,885
1923	300,372	12,700	27,392	18,519	13,277	15 372	8,489	2,986	1,649	2,184	792	2,528	630	1 128	408,018
1924	317,747	-11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	-807	3,178	944	1,370	414,847
1925	381,815	1,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	516,493
1926	395,667	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	613,643
1926:															
January	40,345	6,886	2,832	703	2,188	892									
February	31,435	3,114	3,063	1,113	1,865	741	760	332	438	76	163	303	89	134	56,141
March	40,316	8,907	3,941	1,342	2,079	864	1,041	643	512	143	88	397	145	75	44,375
April	33,416	8,275	4,121	1,781	1,615	1,868	1,037	832	547	129	227	377	109	161	60,868
May	28,705	6,773	2,519	1,848	1,239	1,010	865	402	505	71	93	335	130	193	53,670
June	23,795	5,894	2,196	1,655	1,188	1,465	705	200	468	186	241	225	60	192	44,371
July	34,266	6,768	2,352	2,202	1,552	1,447	1,070	983	636	269	215	303	123	103	39,895
August	26,081	7,327	2,457	2,110	1,888	1,284	800	132	702	295	480	292	121	115	51,524
September	35,675	8,843	1,774	2,029	1,355	1,922	796	655	1,275	303	594	336	90	151	45,347
October	28,110	8,082	3,376	2,423	1,865	2.396	819	472	1 241	283	429	317	91	138	55,388
November	37,673	9,247	2,719	3,007	1,548	3 380	645	585	1 004	301	2	360	100	121	49,370
December	35,850	4,749	2,890	2,562	1,847	856	852	568	916	194	-18	358	90	181	60,695
1927:							439	725	777	248	156	443	151	306	51,999
January	41,815	10,192	3.284	2.481	1,936	1,227									
February	25,886	7,692	3.263	3.103	2 620	1.902	672	803	929	296	181	316	139	100	64,371
March	32,752	9.049	2 050	3.475	3.760	1.578	601	907	460	502	153	336	146	210	47,781
April	44,627	7 875	2,310	2 393	1,509	2.181	852	784	780	454	86	385	137	127	56,026
May	33,761	2 896	2.006	3.380	2,519	1 084	781	1,972	762	448	58	230	177	218	65,541
June	31,270	2,282	2,387	3,632	2,086	798	918	887	694	633	-57	335	155	223	49,434
July								1,506	557		-16				
August															
September															
October															
November															
December															

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—United Kingdom exports to Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. *United States imports of guayule are not included in this compilation; such imports amounted to 4,305 tons in 1926 and averaged about 400 tons monthly during the first six months of 1927.

BOOK REVIEWS

AMERICAN AIRCRAFT DIRECTORY, 1927. Aviation Publishing Corporation, New York. 176 Pages.

The American Aircraft Directory, of which this is the first edition, is a chronicle, in permanent form, of the aviation industry in the United States. It contains a history of the aviation activity of the Army, Navy and Coast Guard, and of the Department of Commerce and the Post Office Department. It contains the air laws and regulations of the United States, together with International air rules and other matters pertinent to aviation. But perhaps the most important feature of the book, and certainly the most comprehensive, is a directory of the flying fields, both municipal and private, throughout the country. This section contains small-scale maps detailing the typography of these fields and listing their officers with a brief history of how they were established and the facilities they offer. A number of rubber companies are noted in the section devoted to Ohio flying fields, including the B. F. Goodrich, Miller and the Goodyear Tire & Rubber Cos. who manufacture aircraft accessories. The Goodyear-Zeppelin Corporation is also listed. The American Aircraft Directory is lavishly embellished with photographs, many of them taken from the air.

* * * *

COMMERCE YEARBOOK, 1926. Vol. I—The United States. Compiled by Bureau of Foreign and Domestic Commerce, Washington, D. C. Government Printing Office, 1927. 676 Pages.

The Commerce Yearbook, of which this is the fifth issue, is being published this year in two volumes. The first volume contains detailed information concerning business conditions in the United States, and the second volume, which has not yet been published, will contain similar data for about 70 foreign countries and for the non-contiguous territories of the United States.

The yearbook aims to supply an authoritative economic review of the year. This is substantiated by the chapter headings which cover production, employment, domestic trade; wholesale, retail and farm prices; foreign trade; agricultural products; fuel and power; construction and metals; machinery, automotive products; rubber and rubber products; textiles and clothing, etc.

The chapter on rubber and rubber products is fairly exhaustive, containing statistical tables showing the advance of the industry since 1921. It is pointed out that the year 1926 saw the establishment of new high records both in production and distribution. Among the major industries of the country which increased their production, the yearbook shows that the output of tire casings increased 1% over that of 1925. Crude rubber imports in the same year set a new high record of 925,878,000, or 4.2% more than in 1925. Also a new record was established in the value of exports of rubber goods, which reached $60,051,000; an increase of 14.1% over 1925.

The chapter on rubber and rubber products contains a survey on crude rubber imports, exports and market prices for the year; a review of the rubber-manufacturing industry, showing crude rubber consumption, and tire and tube production; a review of foreign trade in rubber products, outlining the growth of American export trade in this commodity.

* * * *

PACKING FOR DOMESTIC SHIPMENT. Published by Transportation Division of the Bureau of Foreign and Domestic Commerce. (Domestic Commerce Series 10, 11, 12, 13, 14, 15 and 16.)

These series of bulletins published by the Bureau of Foreign and Domestic Commerce are the result of a survey to determine the best methods of packing for domestic shipment to minimize losses and assure safe delivery. Delivery Commerce Series No. 3 dealt with paper wrapped packages. The new booklets cover fibre containers, cleated plywood boxes, wire-bound boxes, cooperage and steel barrels, wooden boxes, nailed wooden crates and baling.

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